DEPARTMENT OF OCEAN ENGINEERING
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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REMOVAL OF OUT-OF-PLANE DISTORTION IN MILD STEEL PANELS USING FLAME HEATING

by

Larry Lee Janca

Course XIIIA

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→ This report discusses removal of out of plane distortion in mild steel panels using flame heating. Tables (data) are presented with charts and graphs. ←

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APPENDIX F

1/8" STIFFENED PLATE OUT-OF-PLANE DEFLECTION READINGS RECORDED AFTER LINE HEATING THE FIRST PASS

Appendix F contains 10 sets of out-of-plane deflection measurements. The 1st set was recorded after welding but prior to any line heating. The rest were taken after each panel was line heated the first time. See Table 2-2 for the 1st pass line heating sequence.

NOTE: In appendixes D, E, F, and G the TRANSVERSE and LONGITUDE spacing is 2 inches. All deflection readings in the matrixes are in .001 inches. For example, the out-of-plane distortion at 10 inches TRANSVERSE and 2 inches LONGITUDE, in the matrix labeled "DISTORTION MEASUREMENTS OF 3/16" PLATE AFTER WELDING" is -0.075 inches (i.e. 0.075 below the reference point). This point is designated D(6,2) as it is on the 6th line in the TRANSVERSE direction and the 2nd line in the LONGITUDE direction.

DISTORTION MEASUREMENTS OF 1/8" PLATE AFTER WELDING

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-131		-119	-125	-119		-108		-110	-111	-107		-95		-107	-109	-110		-123
	2				-130						-84						-104			
	4	-101			-146			-74			-58			-49			-89			-73
	6				-153						-46						-67			
	8	-94			-144			-45			-42			-16			-49			-32
	10				-128						-32						-38			
	12	-80	-109	-124	-120	-97	-60	-21	-15	-14	-13	-9	-1	10	-10	-20	-24	-19	-12	7
	14				-114						1						-8			
	16	-70			-106			4			15			34			-1			40
	18				-96						36						7			
	20	-67			-85			15			53			53			31			69
	22				-57						58						69			
	24	-65.		-35	-18	2		28		45	57	68		80		87	93	104		105
	26				-60						44						74			
L	28	-65			-88			37			32			99			69			114
O	30				-88						12						71			
N	32	-69			-76			36			-3			95			70			129
G	34				-63						-3						77			
I	36	-75	-76	-71	-53	-27	5	38	16	1	0	24	63	102	93	90	91	101	115	134
T	38				-43						7						96			
U	40	-85			-45			32			19			102			91			135
D	42				-59						33						91			
E	44	-101			-71			27			35			102			96			133
	46				-69						28						97			
	48	-121		-77	-59	-39		6		20	34	46		89		107	113	119		142
	50				-108						40						97			
	52	-139			-145			-9			38			80			78			121
	54				-167						24						55			
	56	-166			-186			-35			11			80			39			111
	58				-204						-5						33			
	60	-195	-214	-224	-215	-184	-133	-65	-58	-46	-29	-10	12	41	22	16	19	37	63	96
	62				-222						-44						3			
	64	-227			-239			-96			-50			18			-3			79
	66				-253						-57						-2			
	68	-265			-253			-131			-73			-5			-5			57
	70				-245						-88						-7			
	72	-301		-259	-234	-212		-169		-126	-109	-87.		-45		-18	-1	13		33

DISTORTION MEASUREMENTS OF 1/8" PLATE AFTER PANEL 5 WAS LINE FLAME HEATED FOR THE FIRST TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-161		-150	-154	-150		-139		-140	-141	-137		-126		-137	-140	-139		-152
	2				-162						-115						-135			
	4	-142			-179			-108			-91			-82			-121			-105
	6				-188						-80						-100			
	8	-126			-180			-82			-76			-50			-83.			-66
	10				-168						-67						-73			
	12	-114	-144	-162	-162	-139	-99	-59	-51	-49	-47	-43	-36	-27	-49	-60	-64	-57.	-48	-27
	14				-159						-33						-50			
	16	-104			-151			-36			-16			-4			-44			5
	18				-143						2						-37			
	20	-103			-131			-27			17			12			-11			33
	22				-100						18						27			
	24	-104		-74	-60	-40		-17		1	13	24		37		46	54	65		68
	26				-104						18						35			
L	28	-104			-138			-8			20			54			28.5			77
O	30				-139						7						30			
N	32	-108			-122			-10			-5			50			32			91.5
G	34				-101						-4						44			
I	36	-115	-113	-104	-85.	-62	-36	-8	-7	-5	0	13	33	57	57.5	61.5	65	73	82	99
T	38				-71.						8						70			
U	40	-125			-73			-12			22			57			62			100
D	42				-91						36						58			
E	44	-140			-107			-16			28			60			60.5			100
	46				-107						4						61			
	48	-158		-116	-99	-79		-36		-22	-8	5		49		69	76	83		110
	50				-153						-2						59			
	52	-177			-193			-52			-3			42			41			90
	54				-216						-15						18			
	56	-203			-235			-75			-25			44			2			83
	58				-251						-41						-4			
	60	-230	-252	-265	-259	-227	-172	-101	-93	-80	-63	-43	-22	7	-11	-20	-15	4.5	34	70
	62				-265						-78						-29			
	64	-259			-277			-130			-81			-11			-33			53
	66				-288						-88						-30			
	68	-298			-287			-163			-102			-34			-31			34
	70				-277						-116						-31			
	72	-335		-290	-264	-242		-199		-154	-138	-115		-71		-41	-24	-10		14

DISTORTION MEASUREMENTS OF 1/8" PLATE AFTER PANELS 5 AND 4 WERE LINE FLAME HEATED FOR THE FIRST TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-147		-136	-140	-135		-125		-128	-128	-125	-125	-115		-125	-127	-128		-140
	2	-139			-152			-111			-103			-85			-122			-112
	4	-135			-174			-99			-80			-70			-108			-90.
	6	-129			-191			-90			-70			-57			-85			-69
	8	-125			-191			-76			-68			-41			-68.			-48.
	10	-123			-185			-65			-60			-28			-56			-30
	12	-121	-156	-182	-182	-155	-107	-57	-47	-44	-42	-37	-29	-18	-37	-46	-48	-40	-30	-10
	14	-123			-181			-52			-28						-34			8
	16	-118			-171			-38			-12			4			-30			24
	18	-120			-156			-31			9			13			-23			39
	20	-122			-139			-33.			23.5			19			3			54
	22	-126			-111			-29			21			37			42			64
	24	-126	-115	-92	-74	-51	-37	-26	-14	-2	11	26		44	55	59	69	82		90
	26	-127			-106			-21			17			50			49			96
L	28	-127			-128			-17.			18.5			61			44			99
O	30	-130			-132			-18			2			60			47			106.
N	32	-131			-127			-17.			-13			57			48.5			113
G	34	-131			-114			-16			-10			62			61			116
I	36	-135	-128	-116	-95	-67	-40	-14	-9	-6	0	17	38	64	68	74	80	91	102	120
T	38	-138			-73			-17			13			65			84			121
U	40	-141			-66			-16			31			66			76			121
D	42	-146			-78			-11			47			67			73			120
E	44	-152			-94			-18.			37			69			75.5			121
	46	-157			-101			-26			10			65			78			125
	48	-166		-122	-103	-82		-35	-27	-18	-3	13		60		83	92	101.		131
	50	-171			-155			-34			6			67			76			117
	52	-179			-193			-45			7			55			38			111
	54	-189			-216			-56			-4			49			35			110
	56	-200			-233			-66			-13			58			20			103.
	58	-213			-248			-77			-28						14			99
	60	-224	-245	-259	-253	-219	-164	-91	-81	-68	-50	-29	-7	23	4	-3	2	24	54	90
	62	-236			-257			-101			-63			14			-12			83
	64	-251			-267			-117			-66			4			-16			73
	66	-264			-276			-134			-72			-8			-12			65
	68	-282			-273			-147			-85			-16			-13.			53
	70	-298			-261			-166			-98.			-32			-14			42
	72	-305		-271	-245	-223	-201	-180		-135	-118	-96		-52		-23	-4	8	22	31

DISTORTION OF 1/8" PLATE AFTER PANELS 5, 4, AND 6 WERE LINE FLAME HEATED FOR THE FIRST TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-145		-134	-138	-133	-128	-122		-126	-127	-122		-111		-122	-125	-126	-129	-138
	2	-136			-150			-109			-101			-84			-120			-110
	4	-132			-172			-97			-77			-68			-117			-89
	6	-126			-187			-88			-67			-55			-88			-68
	8	-123			-187			-74			-66			-39			-72			-49
	10	-121			-182			-64			-58			-25			-64			-31
	12	-118	-153	-180	-181	-153	-105	-56	-46	-42.	-41	-37	-28	-18	-39	-51	-54	-47	-34	-11
	14	-120			-178			-51			-26.			-4			-40			6
	16	-115			-169			-37			-12			3			-31			21
	18	-117			-153			-30			12			12			-20			35
	20	-118			-137			-32			26			17			7			49
	22	-124			-109			-28			22			34			42.5			60
	24	-123	-111	-90	-72	-50	-35	-25	-12	-3	10	25	38	41	50	55	66	77	86	86
	26	-125			-105			-20			16			48			60			92
L	28	-125			-125			-16			16			60			60.5			95
O	30	-127			-130			-17			-3			60			61			104
N	32	-128			-124			-16			-18			58			57.5			111
G	34	-129			-111			-15			-14			63			64			115
I	36	-133	-126	-114	-93	-66	-38	-13	-8	-7	0	15	39	66	70	75	80	90	102	120
T	38	-126			-71			-15			15			68			85			122
U	40	-140			-64			-14			36			70			81			124
D	42	-145			-77			-9			53			71			83			124
E	44	-151			-93			-16			43			74			91			126
	46	-156			-99			-22			15			71			91.5			134
	48	-165	-145	-121	-101	-80		-31.	-22	-14	2.5	18		66	80	90	101	110	122	140
	50	-171			-153			-30			13			74			88			127
	52	-179			-192			-42			14			64			70.5			124
	54	-190			-215			-51			5			59			47			124
	56	-201			-231			-62			-4			69			33			120
	58	-214			-245			-72			-19			50			27			116
	60	-225	-245	-258	-251	-217	-158	-85	-74	-60	-40	-20	4	35	17	10	16	39	71	109
	62	-238			-255			-95			-53			30			4			104
	64	-251			-266			-111			-54			19			1			96
	66	-268			-275			-126			-60			8			7.5			89
	68	-284			-271			-140			-73			1			8			79.5
	70	-300			-259			-158			-85			-14			10			70
	72	-318		-272	-244	-220		-170		-124	-104	-79	-58	-32		0.5	21	34	50	60

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,6,AND 2 WERE HEATED THE FIRST TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-138		-127	-132	-128	-122	-118		-122	-123	-119	-117	-107		-119	-121	-121	-125	-133
	2	-130			-145			-106			-91			-80			-117			-106
	4	-126			-168			-92.			-65			-66			-105			-86
	6	-121			-186			-85			-55			-53			-85			-65
	8	-117			-186			-71			-54.			-37.			-71.			-46
	10	-115			-181			-61			-47			-24.			-63			-28
	12	-112	-149	-177	-179	-152	-103	-53	-39	-32	-29	-26	-22	-16	-39	-52	-56	-47	-33	-9
	14	-115			-177						-13			-10			-43			9
	16	-110			-166			-36			7			4			-34			23
	18	-112			-152			-28			33			13			-22			36
	20	-114			-135			-31			49			18			5			50
	22	-120			-107			-26			39			34			42			60
	24	-120	-109	-87	-70	-48	-34.	-23	-11.	-3	11	25	38	42	51.5	56	65.5	78	88	87
	26	-120			-103			-19			21			50			60			92
L	28	-121			-124			-14.			21			60			60			95
O	30	-124			-130			-16			3.5			60			60			104
N	32	-124			-124			-15			-8			59			56.5			111
G	34	-126			-111			-12.			-10			64			63.5			115
I	36	-130	-123	-111	-90	-63	-35	-10	-7	-5	0	16	40.5	67.5	71	76	80	91	103	121
T	38	-134			-68			-12.			15			70			86			
U	40	-136			-60.			-11			37.5			71			83			124
D	42	-141			-73			-5			54			74			85			125
E	44	-148			-88.			-13			45.5			76			92.5			127
	46	-152			-95			-19			18			73			95			133
	48	-161	-140	-117	-97	-76		-28.	-20	-11	5	21		68.5	81	92.5	102	112		141
	50	-167			-149			-28			14			76			89			129
	52	-175			-187			-39			16			65			73			125
	54	-185			-210			-48			6			60			50			125
	56	-196			-226			-58			-2.5			71			35			121
	58	-208			-240			-69			-16			51			30			118
	60	-220	-241	-253	-246	-212	-154	-81.	-71.	-55	-37.	-15	7.5	38	21	14	19	42	74	110.
	62				-249			-91			-50			31			7			106
	64	-247			-259			-106			-52			22			4			98
	66	-262			-268			-121			-57			11			10			92
	68	-280			-264			-135			-70			4			11			82
	70	-295			-252			-154			-82			-11			13			72
	72	-312	-286	-265	-236	-213		-164		-118	-100	-76	-55	-28		4	23.5	39	54	64

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,6,2,AND 8 WERE HEATED THE FIRST TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-132	-124	-122	-126	-122	-117	-111		-116	-117	-113	-111	-101		-113	-116	-116	-120	-128
	2	-125			-140			-100			-85			-78			-112			-102
	4	-120			-163			-87			-60			-61			-101			-82
	6	-115			-180			-79			-50			-50			-82			-63
	8	-111			-180			-66			-50			-33			-69			-44
	10	-109			-176			-56			-43			-20			-62			-28
	12	-108	-143	-171	-174	-147	-98.	-49	-35	-28	-25	-22	-18.	-14	-37	-50	-54	-45.	-32	-8
	14	-109			-172			-44			-9			-7			-41			8
	16	-103			-162			-30			10			6			-33			22
	18	-105			-147			-25			36			14.5			-21			35
	20	-108			-131			-27			51			19			5			48
	22	-113			-102			-23			41			36			41.5			58
	24	-112	-101	-80	-64.	-44	-30	-20	-8	0	13.5	26		42	51	55.5	64.5	76	85	83
	26	-113			-98			-15			22.5			49			59			88
L	28	-113			-119			-11.			22.5			60			57			91
O	30	-116			-125			-13			4			60			57			99
N	32	-116			-119			-12			-12			57			53			106
G	34	-118			-105			-10			-10			62			60.5			109
I	36	-121	-116	-105	-85	-59	-32	-8	-5	-4	0	15	39	65	68	72	76	85.5	98	114
T	38	-125			-62			-10			14			67			81			116
U	40	-127			-55			-9			35			69			78			113
D	42	-132			-68			-4			50			70			78.5			116
E	44	-138			-84			-11			40			72			85			118
	46	-144			-91			-18			13.5			69			85			125
	48	-152	-132	-111	-93	-73		-28	-20	-12	3	18		63	75	85	94	102.		130
	50	-160			-144			-28			18			69			80.5			116
	52	-168			-179			-39			29			58.5			65			111
	54	-179			-201			-49			26			54			42			111
	56	-189			-217			-58.			21			63.5			26			106
	58	-201			-230			-70			8.5			43			20			102
	60	-212	-233	-244	-236	-203	-149	-82	-57.	-34	-14	1.5	12	30	11	3.5	8	29.5	59	95
	62	-225			-240			-92			-27			23			-5			89
	64	-239			-253			-107			-32			13			-7			80
	66	-253			-263			-122			-41.			3			-2			73
	68	-271			-261			-136			-60			-5			-2			63
	70	-285			-248			-154			-81			-20			-1			53
	72	-302		-259	-233	-212	-189	-167		-123	-106	-83	-63	-38		-10	8	20	35	43

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,6,2,8,AND 3 WERE HEATED THE FIRST TIME

TRANSVERSE

LONGITUDINAL	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
0	-124		-113	-118	-114	-109	-104		-110	-111	-107	-106	-96		-108	-110	-110	-113	-120
2	-114			-131			-91			-79			-71			-96			-98
4	-111			-155			-81			-51			-57			-75			-80
6	-105			-172			-72			-41			-46			-47			-62
8	-101			-172			-60			-42			-31			-28			-44
10	-100			-166			-50			-36			-19			-18			-28
12	-97	-133	-161	-164	-139	-91.	-44	-29.	-23	-19.	-17.	-15	-11	-6.5	-2	-5	-10.	-18	-11
14	-99			-161			-38			-5			-6			10			5
16	-94			-152			-26			12			6			15			18
18	-96.			-137						37			15			18			32
20	-99			-121			-22			53			19.5			33			46
22	-104			-94			-17			44			35			54			58
24	-103	-93	-73	-57	-37	-23	-15	-3.5	5	17	29	41	43	51	65	64	75	84	84
26	-104			-91			-10			26			49			55			89
28	-105			-112			-6			24.5			60.5			54.5			92
30	-107			-117			-7			5			60			55			101
32	-108			-112			-6			-13			58.5			54			108
34	-110			-98			-5			-10.			64			62.5			112
36	-114	-108	-97	-78	-51	-25	-2.5	-1.5	-4	0	15	40	67	73	78	81.5	92	103	118
38	-118			-55			-5			16			69.5			88			120
40	-121			-48			-4			38			71			84			121
42	-127			-61.			1			55			73			85			121
44	-133			-79			-6			46			76			91			123
46	-138			-86			-13			18.5			73			91			130
48	-147	-126	-105	-87	-67		-22.	-14	-7	8	23		68	81	90	100.	109		137
50	-152			-131			-21			25			76			88.3			125
52	-161			-174			-32			36.5			66			73.5			122
54	-172			-195			-42			34			61.5			51			121
56	-183			-209			-52			29			72			35			116.
58	-195			-224			-62.			15.5			52.5			29			113
60	-207	-227	-238	-229	-197	-143	-75	-50	-26.	-6	10	21.5	39	21	13	18	39	69	105
62	-220			-232			-85			-19			33			7			100
64	-233			-247			-100			-23.			24			3			92
66	-249			-257			-115			-33			12			9			85
68	-267			-255			-130			-52			5			10			75
70	-282			-243			-147			-71			-10			11			65
72	-301		-254	-227	-204	-182	-159		-114	-96	-73		-28		2	21	33.5	48	57

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,6,2,8,3,AND 1 WERE HEATED THE FIRST TIME

TRANSVERSE

		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-76		-78	-89	-90	-90	-88		-96	-98	-95	-94	-85		-98	-100	-101	-104	-111
	2	-76			-100			-78			-66			-60			-86			-89
	4	-81			-130			-68.			-38			-47.			-64			-69
	6	-8[illegible]			-160			-63			-28			-33			-36.			-50
	8	-86			-176			-53			-30.			-22			-17			-33
	10	-90			-185			-45			-24			-10			-7			-17
	12	-92	-141	-184	-192	-157	-92	-40	-17	-6	-4	-6	-6	-3	1.5	8	6.5	3	-4	3
	14	-98			-188			-37			13			2			19			18
	16	-97			-165			-24			33.5			14			23			33
	18	-100			-134			-19			60			23			26.5			46
	20	-104			-110			-23			73			28			42			60
	22	-108			-84			-18			55			44			64			71
	24	-105	-94	-74	-59	-35.	-24	-16	-3	7	19	34	47	50	60	66	75	89	99	98
	26	-103			-89			-10			25			58			68.5			104
L	28	-101			-108			-4.5			22.5			68.5			68			107
O	30	-101			-109			-4			-1			68.5			70			116
N	32	-100			-99			-2			-20			67.5			69			123
G	34	-99			-83			2			-16.			73			78			126
I	36	-101	-93	-81	-63	-37.	-15	4.5	4	-1.5	0	18	47	77	84	91	96.5	104.	116	131
T	38	-103			-41			3.5			21			80			101			133
U	40	-104			-34			6			49			82			96			133
D	42	-108			-47.			13			68.5			84			96.5			133
E	44	-113			-64			7.5			60			88			102.			134.
	46	-117			-68			2			33.5			86			102.			141
	48	-125	-104	-84	-67	-48		-6	2	8	23	37.5		81	93	102.	112	119.	130	147
	50	-128			-116			-3.5			40			89			99			133
	52	-135			-151			-14			53			80			85			129
	54	-144			-170			-21			51			75			63			129
	56	-152			-184			-30			47			88			48			124
	58	-163			-196			-39			35.5			68			42.5			119.
	60	-173	-194	-207	-201	-169	-113	-50	-26	-3	15	29	39	54	36	27.5	31.5	52	80	112
	62	-183			-203			-59			2			48			19			106
	64	-196			-214			-73			-2			40			16			98
	66	-207			-223			-86.			-10			30			21.5			91
	68	-225			-218			-99			-28			23			21.5			80
	70	-238			-204			-115			-46.			9			22.5			70
	72	-252		-212	-187	-166	-147	-125		-86	-70	-50	-32	-8.5		16	32.5	42	55	61

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,6,2,8,3,1,AND 7 WERE HEATED THE FIRST TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-56		-58	-67	-67	-66	-64		-71	-73	-70	-68.	-59		-71.	-74	-74	-77	-85
	2	-56.			-78			-56			-41			-35			-61			-62
	4	-61			-108			-46.			-15			-23.			-40			-46
	6	-63			-139			-42			-7			-14			-14			-28.
	8	-66			-155			-32			-10			0			5			-12.
	10	-69			-164			-25			-5			10.5			14			2.5
	12	-72	-122	-166	-174	-139	-74	-21	3	13	15	13.5	13	15	20	25	24	19	13	19
	14	-78.			-171			-17			32			19.5			36			33.5
	16	-76			-148			-6			52			30			38.5			47
	18	-80			-118			-2			77.5			37			39			59
	20	-83			-93			-6			90			40			53			71
	22	-87			-67			-3			69			56			74			80
	24	-83	-75	-57	-42	-20	-8.5	-1	10	19	31.5	45	58	61	70	74	84	96.5	106	106
	26	-81			-71			3.5			36			67			75.5			111
L	28	-79			-89			9			31			77			76.5			112
O	30	-78			-90			8			2			76			77.5			119
N	32	-76.			-80			9			-21			73			75			124
G	34	-75			-65			12			-18			78			82.5			126.
I	36	-76.	-72	-64	-47.	-25	-3.5	14.5	9	0	0	18	48	81	87	93	96	105	114	130
T	38	-78			-30			13			28.5			82.5			98.5			129.
U	40	-79.			-27.			14.5			62			84			91			129
D	42	-83			-42			21			85			85			92			126.
E	44	-88			-55			15			72.5			88			96			126
	46	-91.			-56			9.5			39			85			96			131
	48	-99		-65	-52.	-37		2	8	12	26	39		79		97	104	110	118	133.
	50	-103			-97.			6			45			83			90			118
	52	-107			-133			-3.5			63			76			73			110
	54	-112			-156			-9			65			71			49			107
	56	-119			-189			-16			64			81			32			100
	58	-124			-198			-23			55.5			62			24			93
	60	-128	-164	-197	-203	-168	-102	-32	-3	20	35	41	41	49	23	10.5	11	28	52.5	83
	62	-133			-199			-37.			22			43			-2.5			74
	64	-138			-197			-48.			20			35			-7			62
	66	-143			-186			-59.			11			24			-2			52
	68	-152			-164			-69			-9			17			-3			39
	70	-156			-141			-81			-31			2			-3.5			25
	72	-163		-141	-126	-114	-102	-90		-64	-55	-41.	-31	-15		-4	5	8	13	13.5

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,6,2,8,3,1,7,AND 9 WERE HEATED THE FIRST TIME

TRANSVERSE

LONG	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
0	-44		-45.	-54.	-55	-53.	-51		-58	-59.	-56	-55	-46		-57	-60	-60	-63	-70
2	-45			-66.			-43			-29			-22			-47			-49
4	-50.			-96.			-34.			-2			-10			-27			-32
6	-53			-127			-30			5.5			0			-1.5			
8	-57			-144			-21.			1.5			12.5			17.5			1.5
10	-61			-154			-14			7			23			26			16
12	-64	-113	-158	-165	-130	-65	-11	13	23	26	24	24	27	31	36.5	35.5	32	25	33
14	-70.			-164			-9			44			31			47			47
16	-69			-142			2.5			63.5			41			50			60
18	-73			-111			7			89			46			51			72
20	-76			-87			1.5			100			50			64			84
22	-82			-61			5			78.5			65			85			94
24	-78	-70	-51	-35.	-14	-3	6	17	26.5	41	52.5	65	70		84	95	108	118	119
26	-76			-66			11			43			75			86			123
28	-74.			-84			14.5			36			85			87			124
30	-74.			-85			13.5			5			83			89			132
32	-73			-75			14.4			-20			79			88			136
34	-73			-60.			16.5			-18			84			95			138
36	-74.	-70	-61	-44	-22	-1	19	11.5	1	0	19	51	86	94	102	108.	115.	124.	140
38	-76			-27			16			30			87			108			140
40	-79			-25			17			65			88			97			139
42	-82			-40			23			88			88			93			136
44	-88			-55			17			75			91			96			135
46	-92			-56			11			41			88			96.7			140
48	-101	-85	-66	-53	-37		2	9	14	27	40		81	93	100	107	115		141
50	-105			-98			6			47			87			106			122
52	-110			-134			-4			65			77			103			116.
54	-117			-157			-10			68			72			83			112
56	-123			-180			-17			68			82			63.5			106
58	-129			-201			-25			58			62			50			99
60	-134	-169	-202	-206	-171	-106	-35	-4	22.5	40	47	45.5	50	38	28.5	29.5	44.5	65	89
62	-139			-205			-41			29			43			12.5			82
64	-146			-202			-51			29			36			11			72
66	-152			-194			-62			20			25			23.5			65
68	-161			-171			-72			-4			20			24			54
70	-166			-148			-85			-28			5			17			43
72	-172		-149	-132	-120	-106	-93.		-65	-55	-40	-28	-10		4	16.5	22	31	34

APPENDIX G

1/8" STIFFENED PLATE OUT-OF-PLANE DEFLECTION READINGS RECORDED AFTER LINE HEATING THE 2ND, 3RD, AND 4TH PASS

Appendix G contains 8 sets of out-of-plane deflection measurements. The first 4 are for the 2nd heating pass, the next 2 are for the 3rd pass, and the last 2 are for the 4th pass. See Table 2-2 for the line heating sequence of each pass.

NOTE: In appendixes D, E, F, and G the TRANSVERSE and LONGITUDE spacing is 2 inches. All deflection readings in the matrixes are in .001 inches. For example, the out-of-plane distortion at 10 inches TRANSVERSE and 2 inches LONGITUDE, in the matrix labeled "DISTORTION MEASUREMENTS OF 3/16" PLATE AFTER WELDING" is -0.075 inches (i.e. 0.075 below the reference point). This point is designated D(6,2) as it is on the 6th line in the TRANSVERSE direction and the 2nd line in the LONGITUDE direction.

DISTORTION OF 1/8" PLATE AFTER PANEL 5 WAS HEATED THE SECOND TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-141			-153			-149			-159			-146			-161			-172
	2				-164						-128						-148			
	4				-196						-102						-126			
	6				-227						-96						-98			
	8				-245						-100						-79			
	10				-257						-94						-70.			
	12	-162	-213	-259	-268	-233	-165	-112	-87	-76	-75	-77	-78.	-76	-70	-63	-62	-65	-73.	-69
	14				-266						-57						-53			
	16				-245						-38						-53			
	18				-215						-15						-54			
	20				-190						-7						-42			
	22				-164						-31						-21			
	24	-179			-138			-98			-65			-35			-8.5			16.5
	26				-167						-46						-10			
L	28				-184						-26						-4.5			
O	30				-185						-27						2.5			
N	32				-176						-31						1			
G	34				-163						-18						3			
I	36	-176	-172	-164	-148	-127	-106	-85	-44	-11	0	-5	-16	-19	-6.5	6	12.5	18	24	38
T	38				-132						14						10			
U	40				-127						26						-1			
D	42				-140						24						-6			
E	44				-154						-10						-5			
	46				-156						-58						-8			
	48	-201			-154			-101			-77						4			39
	50				-201						-59.			-24			11.5			
	52				-239						-43						33			
	54				-264						-43						47			
	56				-285						-46						57			
	58				-304						-59						59			
	60	-232	-269	-303	-309	-274	-207	-137	-112	-91	-80	-75	-72	-56	-35.	3	37	51	31	-17
	62				-305						-89						1			
	64				-303						-86						-27			
	66				-293						-91						-45			
	68				-271						-111						-67			
	70				-248						-134						-87			
	72	-269			-233			-196			-160			-117			-94			-77

DISTORTION OF 1/8" PLATE AFTER PANELS 5 AND 4 WERE HEATED THE SECOND TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-127			-139			-136			-146			-133			-148			-158
	2				-151						-116						-135			
	4				-182						-91						-115			
	6				-213						-84						-87			
	8				-231						-89						-69			
	10				-243						-83						-60.			
	12	-148	-199	-246	-254	-221	-155	-101	-76	-65	-63	-65	-68	-66	-61	-54	-54	-57	-65	-60
	14				-255						-45						-45			
	16				-236						-26						-46			
	18				-206						-4						-48			
	20				-182						3						-35			
	22				-155						-21						-15			
	24	-164			-127			-88			-57			-28			-3			21
	26				-153						-40						-6			
L	28				-164						-23						0			
O	30				-156						-28						7			
N	32				-141						-34						5			
G	34				-124						-20						8			
I	36	-162	-150	-131	-110	-92	-83	-78	-39	-10	0	-4	-14	-15	-3	9	5.5	19	23.5	37.5
T	38				-96						18						11			
U	40				-97.						32						-2			
D	42				-116						31						-8			
E	44				-136						-4						-7.5			
	46				-143						-54						-11			
	48	-183			-143			-93			-74			-24			0			32
	50				-191						-55						7			
	52				-228						-37						28			
	54				-251						-36						41			
	56				-271						-40						50			
	58				-288						-54						51			
	60	-209	-247	-283	-291	-258	-194	-127	-103	-86	-77	-73	-72	-57.	-39	-2	30	41	19	-30
	62				-285						-88						-6			
	64				-282						-84						-35			
	66				-272						-88						-54			
	68				-250						-108						-77			
	70				-227						-130						-99			
	72	-240			-211			-182			-155			-122			-107			-100

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4, AND 1 WERE HEATED THE SECOND TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-128			-141			-139			-148			-135			-151			-161
	2				-144						-117						-138			
	4				-167						-92						-117			
	6				-199						-86						-90			
	8				-218						-92						-71			
	10				-231						-87						-63			
	12	-154	-195	-233	-238	-206	-148	-106	-81	-69	-67	-69	-71	-69	-64	-57	-56.	-59	-62.	-62
	14				-228						-49						-48			
	16				-198						-29						-49			
	18				-166						-6.5						-51			
	20				-150						0						-39			
	22				-138						-25						-18			
	24	-170			-132			-93			-61			-31			-6.5			17.5
	26				-156						-44						-10			
L	28				-166						-28						-2			
O	30				-159						-32						5			
N	32				-145						-35						2.5			
G	34				-130						-21						4			
I	36	-167	-154	-136	-115	-97	-87.	-82	-41	-11	0	-4.5	-16.	-18	-6	6	11	16	21	35
T	38				-101						16.5						7			
U	40				-101						30						-5			
D	42				-120						28						-10			
E	44				-140						-6						-10			
	46				-146						-56						-13			
	48	-184			-146			-96			-76.			-26			-2			30
	50				-194						-58						6			
	52				-230						-40						27			
	54				-254						-38.						40			
	56				-273						-42						49			
	58				-291						-56.						50			
	60	-211	-248	-285	-294	-260	-196	-129	-105	-88	-79	-76	-75	-61	-41	-4	28	39	17.5	-32
	62				-288						-89						-8			
	64				-284						-86						-38			
	66				-275						-91						-56			
	68				-251						-109						-79			
	70				-228						-131						-101			
	72	-243			-213			-184			-158			-125			-109			-101

DISTORTION OF 1/8" PLATE AFTER PANELS 5,4,1, AND 7 WERE HEATED THE SECOND TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-131			-145			-141			-151			-138			-153			-162
	2				-147						-121						-140			
	4				-170						-94						-119			
	6				-202						-88						-92			
	8				-221						-94						-74			
	10				-234						-89						-66			
	12	-156	-198	-236	-240	-209	-150	-108	-83	-71.	-70	-72	-73.	-71	-66	-59	-59	-62	-70	-65.
	14				-230						-51						-50			
	16				-201						-31						-52			
	18				-169						-9						-54			
	20				-152						-2						-42			
	22				-140						-26.						-21			
	24	-172			-134			-95			-63			-34			-9			15
	26				-158						-46						-11			
L	28				-169						-29						-5			
O	30				-162						-31						2			
N	32				-148						-34						-1			
G	34				-132						-20						1			
I	36	-169	-156	-138	-117	-100	-90	-84	-43	-11	0	-4	-18	-21	-9.5	2	8	13	18	31
T	38				-103						16						4			
U	40				-102						28						-8			
D	42				-119						25						-14			
E	44				-138						-10						-13			
	46				-145						-59.						-16.			
	48	-188			-148			-99			-79			-29			-5			25.5
	50				-178						-59						2			
	52				-203						-40						23			
	54				-222						-39						37			
	56				-248						-44						46			
	58				-274						-59						47			
	60	-212	-247	-279	-286	-255	-194	-132	-108	-91	-82	-78	-77	-63	-44	-7	25	37	14	-36
	62				-284						-91						-12			
	64				-278						-87						-41			
	66				-264						-90						-59			
	68				-240						-110						-82			
	70				-221						-133						-104			
	72	-241			-214			-186			-159			-126			-111			-105

DISTORTION OF 1/8" PLATE AFTER PANEL 1 WAS HEATED THE THIRD TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-131			-145			-143			-154			-141			-156			-166
	2				-143						-122						-143			
	4				-161						-95						-123			
	6				-185						-88						-95			
	8				-198						-94						-77			
	10				-204						-89						-70			
	12	-158	-185	-206	-202	-174	-132	-111	-85	-72	-70	-72	-75	-74.	-69.	-63	-63	-66	-72	-68.
	14				-186						-52						-55			
	16				-156						-33						-56			
	18				-134						-12						-57			
	20				-129						-6						-44.			
	22				-130						-30						-23.			
	24	-174			-137			-98.			-66			-36			-12			12
	26				-162						-49.						-14			
L	28				-174						-32						-8			
O	30				-167						-33						-2			
N	32				-153						-34						-5			
G	34				-136						-19						-3			
I	36	-171	-159	-140	-120	-103	-93	-88	-45	-11	0	-5	-19.	-23	-12.	-1	4	9.5	15	28.5
T	38				-105						15						0			
U	40				-104						26						-12			
D	42				-121						22.5						-17			
E	44				-141						-13.						-16			
	46				-148						-63						-20			
	48	-191			-151			-102			-82.			-32			-8			23.5
	50				-183						-63						-1			
	52				-207						-43						21			
	54				-226						-42.						34			
	56				-252						-47						43			
	58				-279						-62						44			
	60	-216	-251	-283	-289	-260	-199	-135	-112	-94.	-85	-82	-80	-66	-47	-10	22	34	11	-38
	62				-287						-94						-15			
	64				-282						-90						-44			
	66				-268						-93						-62			
	68				-244						-112						-85			
	70				-225						-136						-107			
	72	-246			-218			-189			-162			-130			-114			-106

DISTORTION OF 1/8" PLATE AFTER PANELS 1 AND 7 WERE HEATED THE THIRD TIME

TRANSVERSE

LONGITUDINAL	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
0	-132			-148			-145			-155			-142			-158			-168
2				-144						-123						-145			
4				-162						-96						-124			
6				-186						-90						-97			
8				-200						-96						-78.			
10				-205						-91						-71			
12	-158	-186	-207	-203	-176	-133	-113	-87	-74	-71	-74	-77	-75	-71	-65	-65	-68	-76	-71
14				-187						-53						-56.			
16				-158						-35						-58			
18				-135						-13.						-59			
20				-130						-7.5						-47			
22				-131						-32						-26			
24	-175			-138			-100			-68			-38			-14			10
26				-163						-51						-17			
28				-175						-34						-10			
30				-169						-35						-4			
32				-155						-36						-7			
34				-139						-20						-6			
36	-172	-160	-143	-123	-106	-96	-90	-46	-12	0	-6	-21	-26	-15.	-4	1.5	6	12	25.5
38				-107						15						-2.5			
40				-105						25						-14			
42				-121						21						-19			
44				-139						-16						-19			
46				-146						-65						-22			
48	-191			-152			-104			-84			-33			-10.			20.5
50				-166						-62.						-3.5			
52				-176						-42						17			
54				-187						-42						31			
56				-213						-48.						40			
58				-247						-66						41			
60	-212	-238	-264	-267	-239	-187	-136	-115	-99	-89	-85	-82	-68	-49	-12	19	31	7.5	-43
62				-273						-98						-17			
64				-271						-91						-46			
66				-257						-92						-65			
68				-232						-111						-87.			
70				-214						-135						-110			
72	-236			-212			-186			-161			-129			-117			-113

DISTORTION OF 1/8" PLATE AFTER PANEL 7 WAS HEATED THE FOURTH TIME

		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0																			
	2																			
	4																			
	6																			
	8																			
	10																			
	12																			
	14																			
	16																			
	18																			
	20																			
	22																			
	24	-175			-139			-101			-69			-39.						
	26				-164						-52.									
L	28				-176						-34									
O	30				-170						-35									
N	32				-156						-35									
G	34				-139						-19									
I	36	-172	-160	-142	-123	-105	-96	-91	-48	-12	0	-5.5	-21	-27						
T	38				-106						14									
U	40				-104						24									
D	42				-120						19									
E	44				-138						-17									
	46				-146						-68									
	48	-191			-154			-105			-85.			-35						
	50				-155						-62.									
	52				-159						-42									
	54				-165						-41									
	56				-186						-49									
	58				-219						-64									
	60	-211	-227	-242	-241	-216	-175	-135	-116	-100	-90	-86	-84	-68						
	62				-250						-98									
	64				-250						-90									
	66				-239						-91									
	68				-217						-109									
	70				-204						-134									
	72	-232			-209			-185			-161			-131						

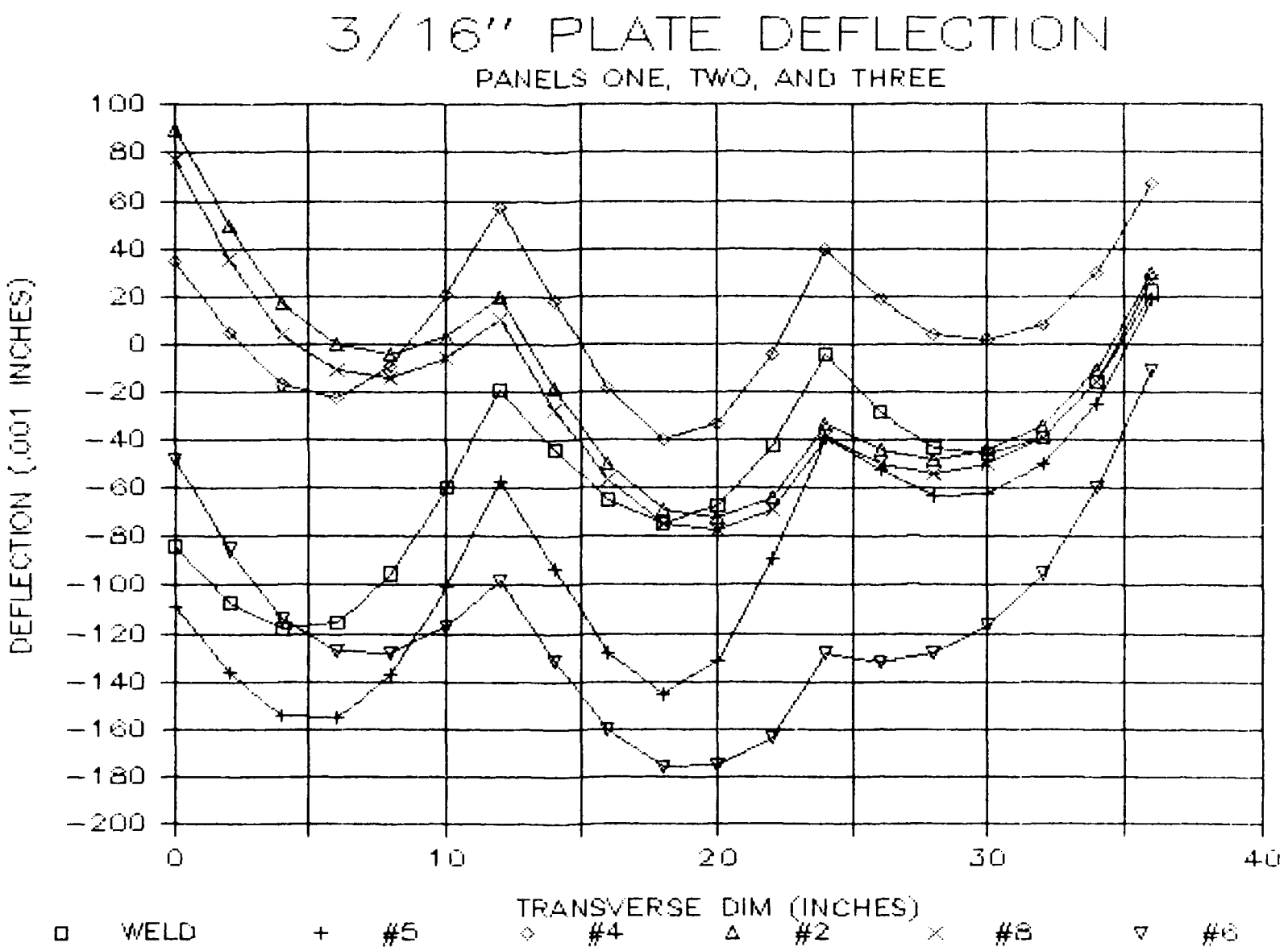
DISTORTION OF 1/8" PLATE AFTER PANELS 7 AND 1 WERE HEATED THE FOURTH TIME

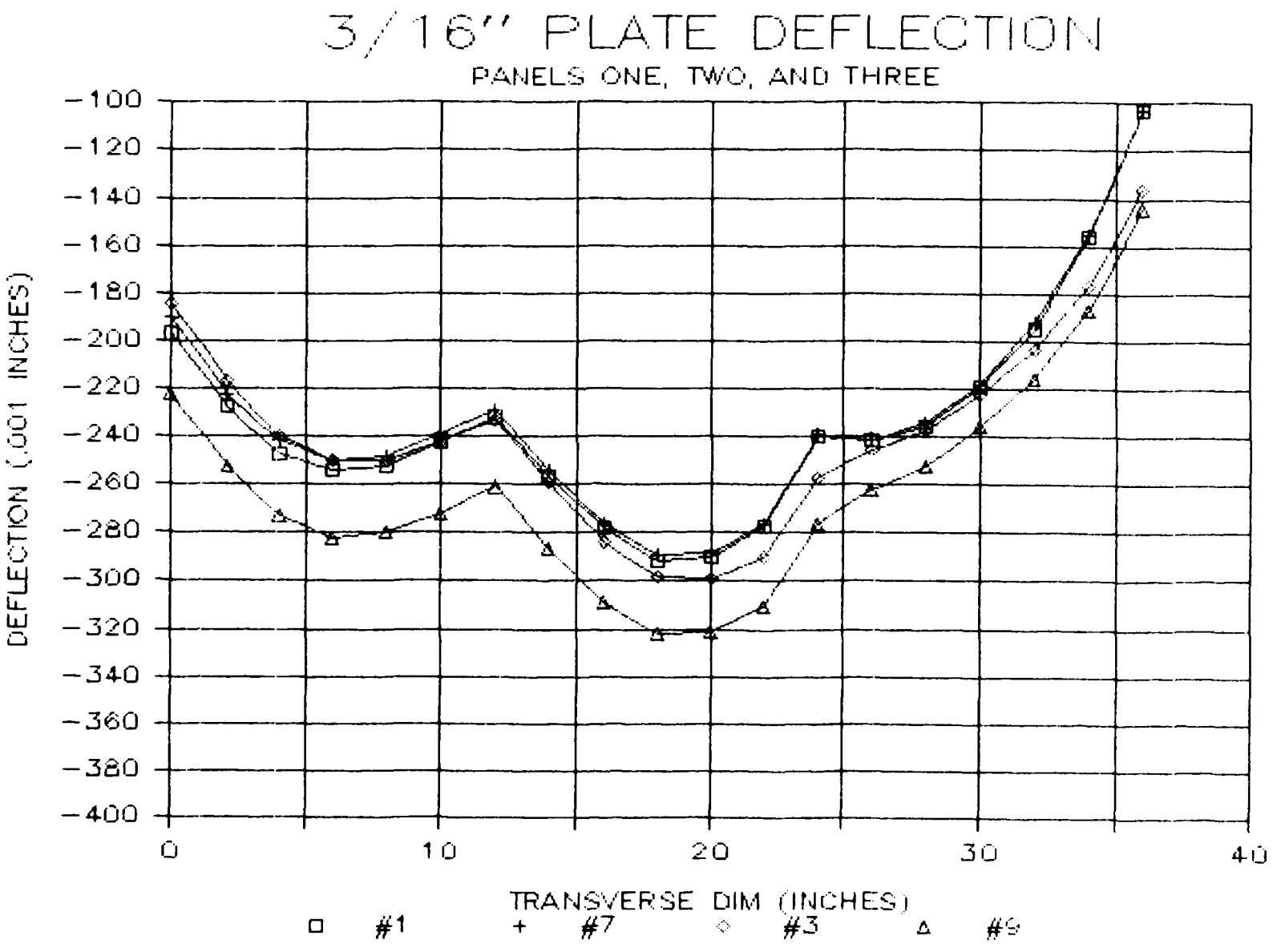
		TRANSVERSE																		
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	0	-134			-150			-147			-157			-145						
	2				-143						-126									
	4				-155						-99									
	6				-172						-93									
	8				-177						-100									
	10				-173						-96									
	12	-163	-172	-174	-164	-144	-118	-116	-90.	-77	-74	-75	-78	-78						
	14				-148						-55									
	16				-125						-34									
	18				-113						-12									
	20				-117						-7									
	22				-125						-33									
	24	-180			-142			-103			-69			-40.						
	26				-166						-54									
L	28				-177						-37									
O	30				-171						-37									
N	32				-156						-36									
G	34				-140						-19									
I	36	-176	-164	-146	-125	-107	-97	-91.	-47	-12	0	-6	-21	-27.						
T	38				-109						15									
U	40				-107						24									
D	42				-123						19									
E	44				-140						-17									
	46				-148						-67									
	48	-194			-155			-105			-85			-34						
	50																			
	52																			
	54																			
	56																			
	58																			
	60																			
	62																			
	64																			
	66																			
	68																			
	70																			
	72																			

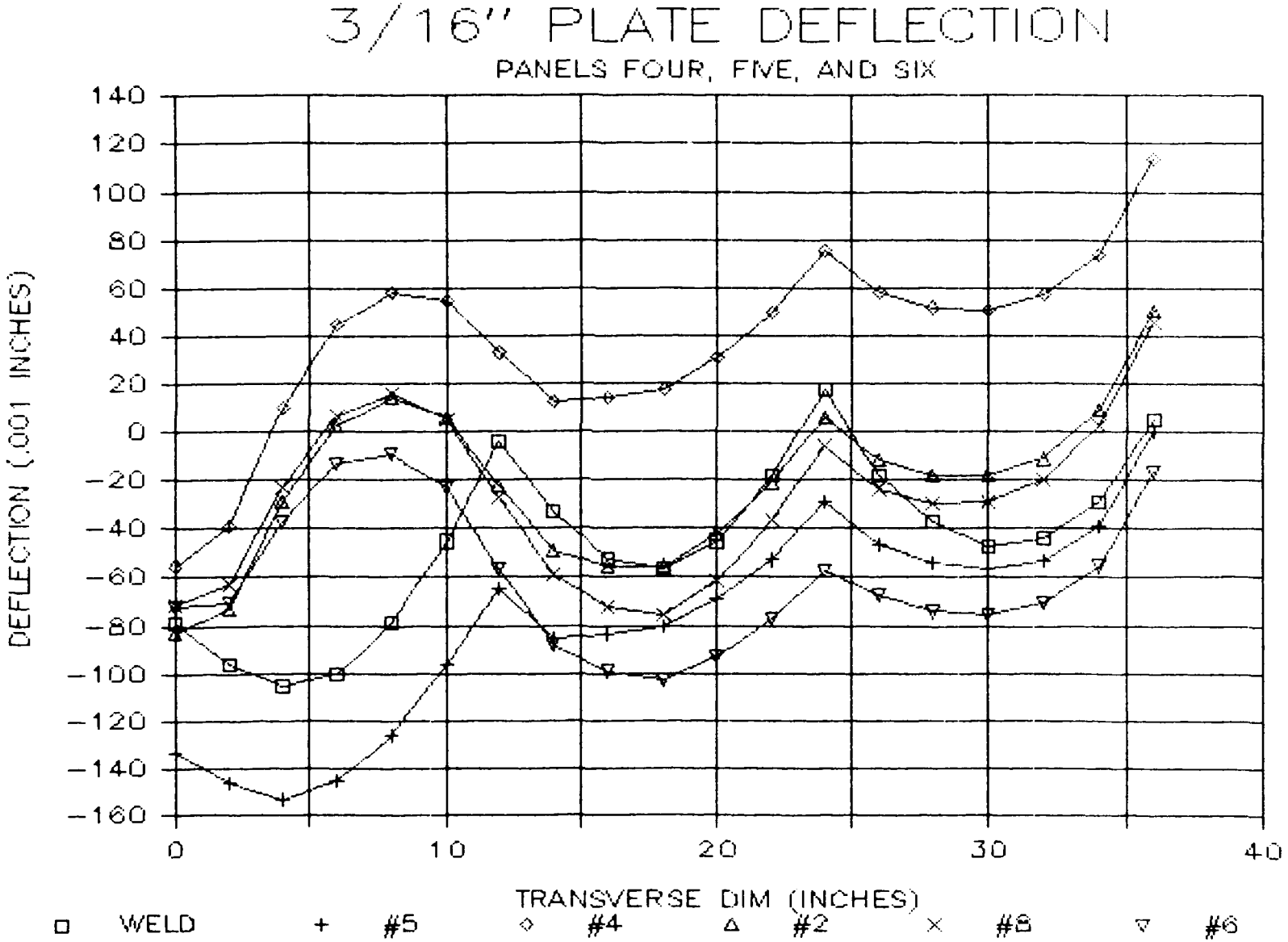
APPENDIX H

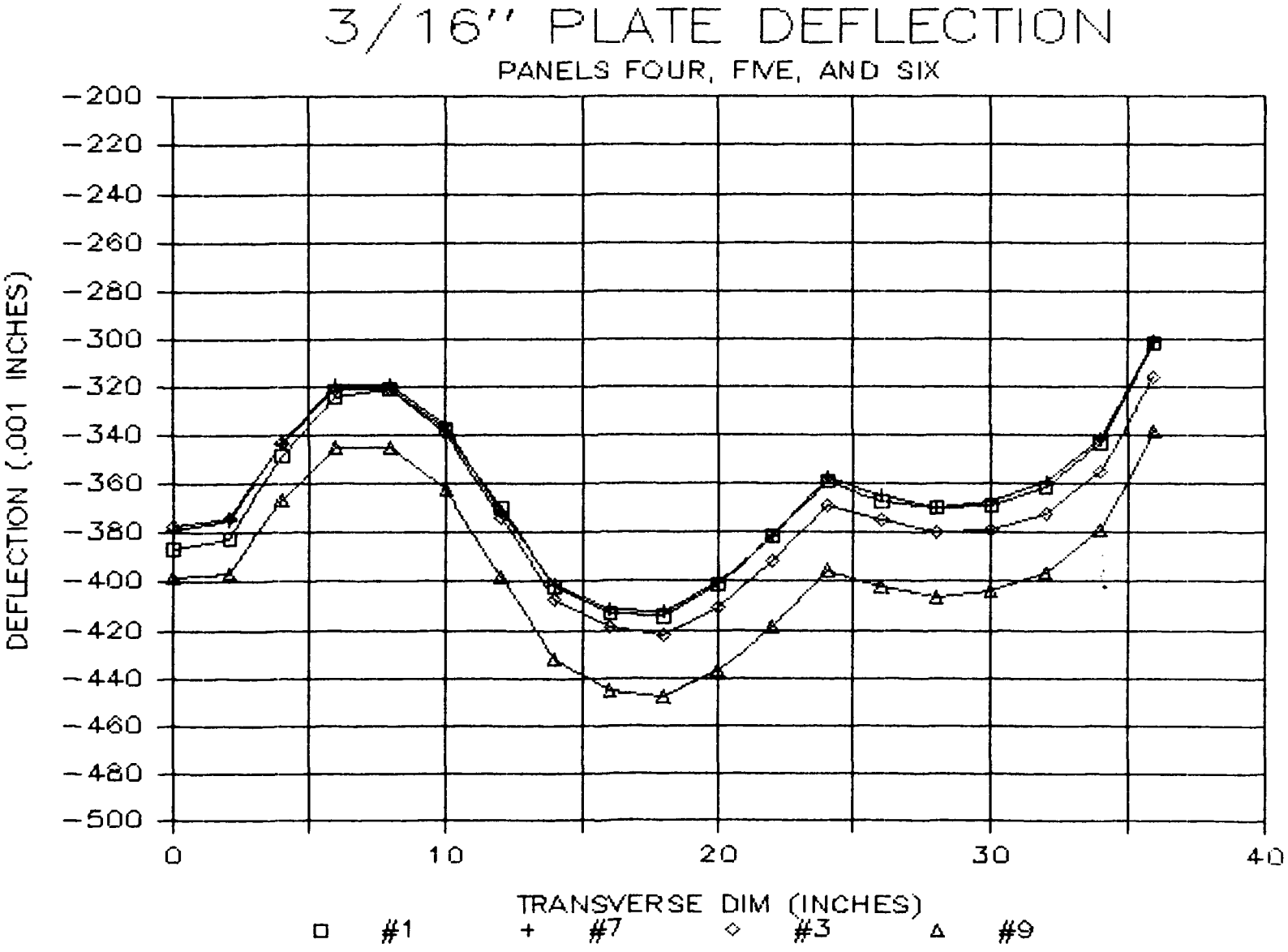
GRAPHS OF THE 3/16" STIFFENED PLATE MID-PANEL DEFLECTIONS AFTER THE FIRST LINE HEATING PASS

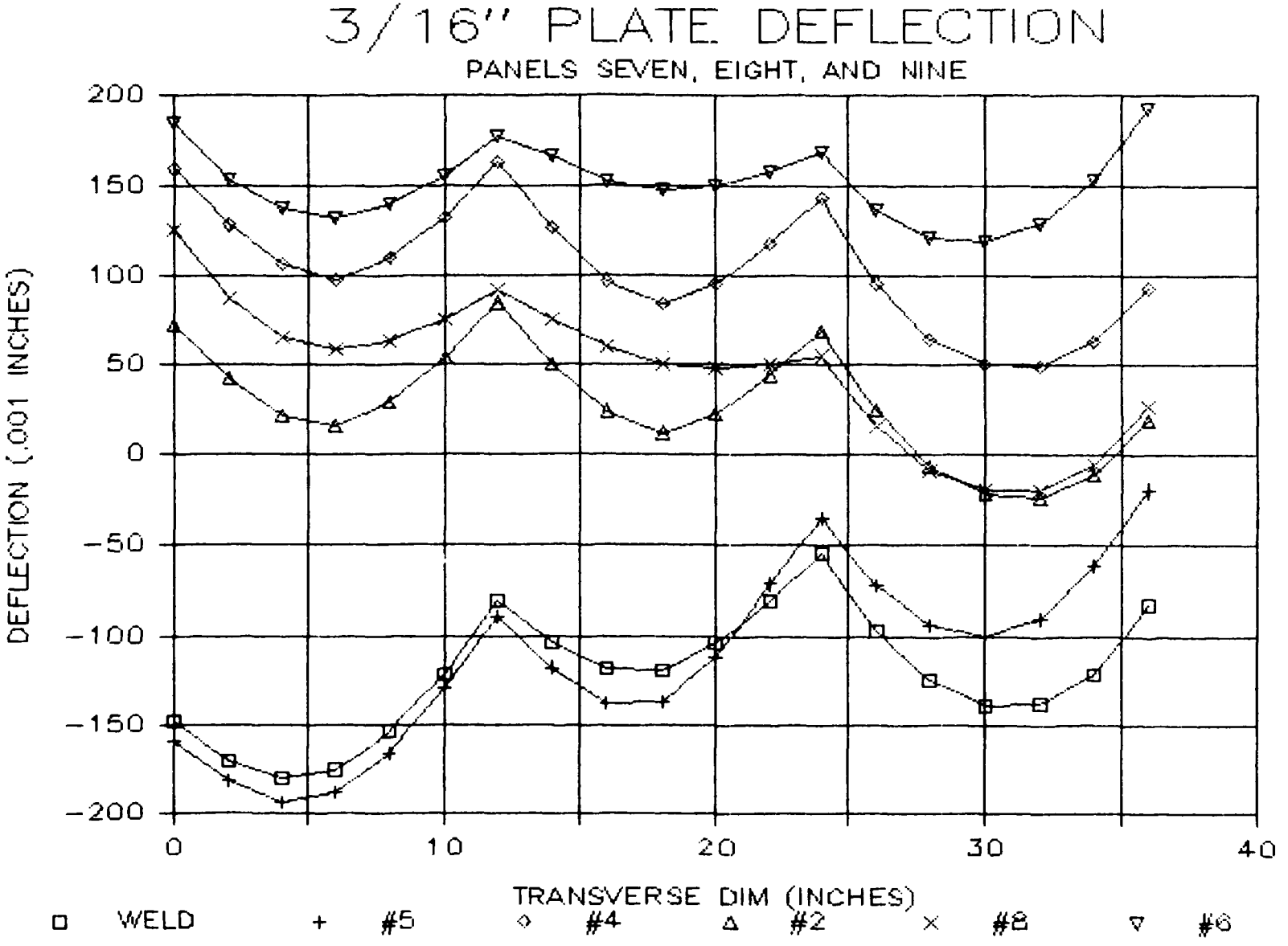
The horizontal coordinate is transverse or longitudinal displacement. measured in inches. and the vertical coordinate is out-of-plane deflection. measured in thousandths of an inch.

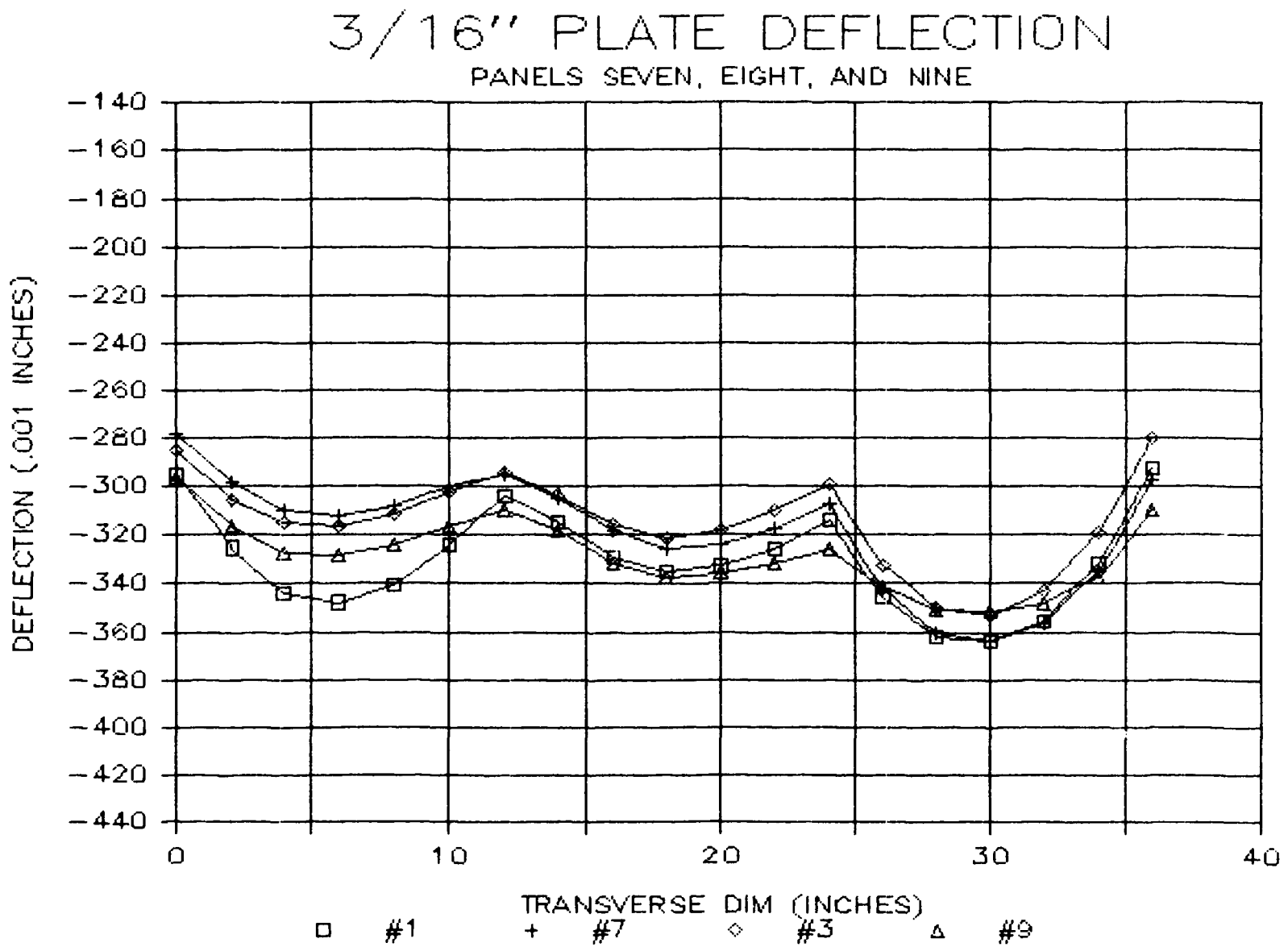

3/16" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
10
20
30
40
TRANSVERSE DIM (INCHES)
WELD
#5
#4
#2
#8
#6

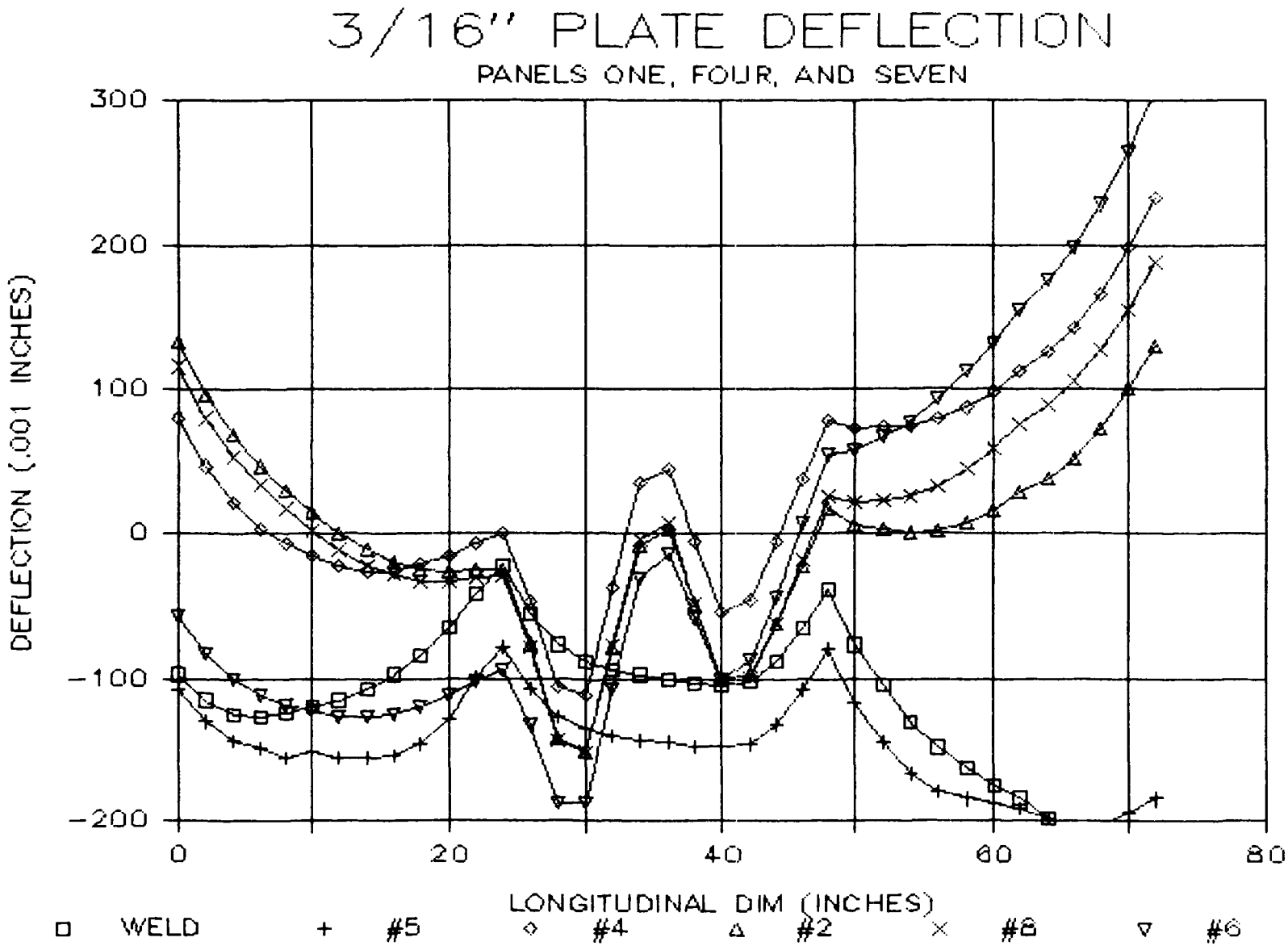

3/16" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300
-320
-340
-360
-380
-400
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#1
#7
#3
#9

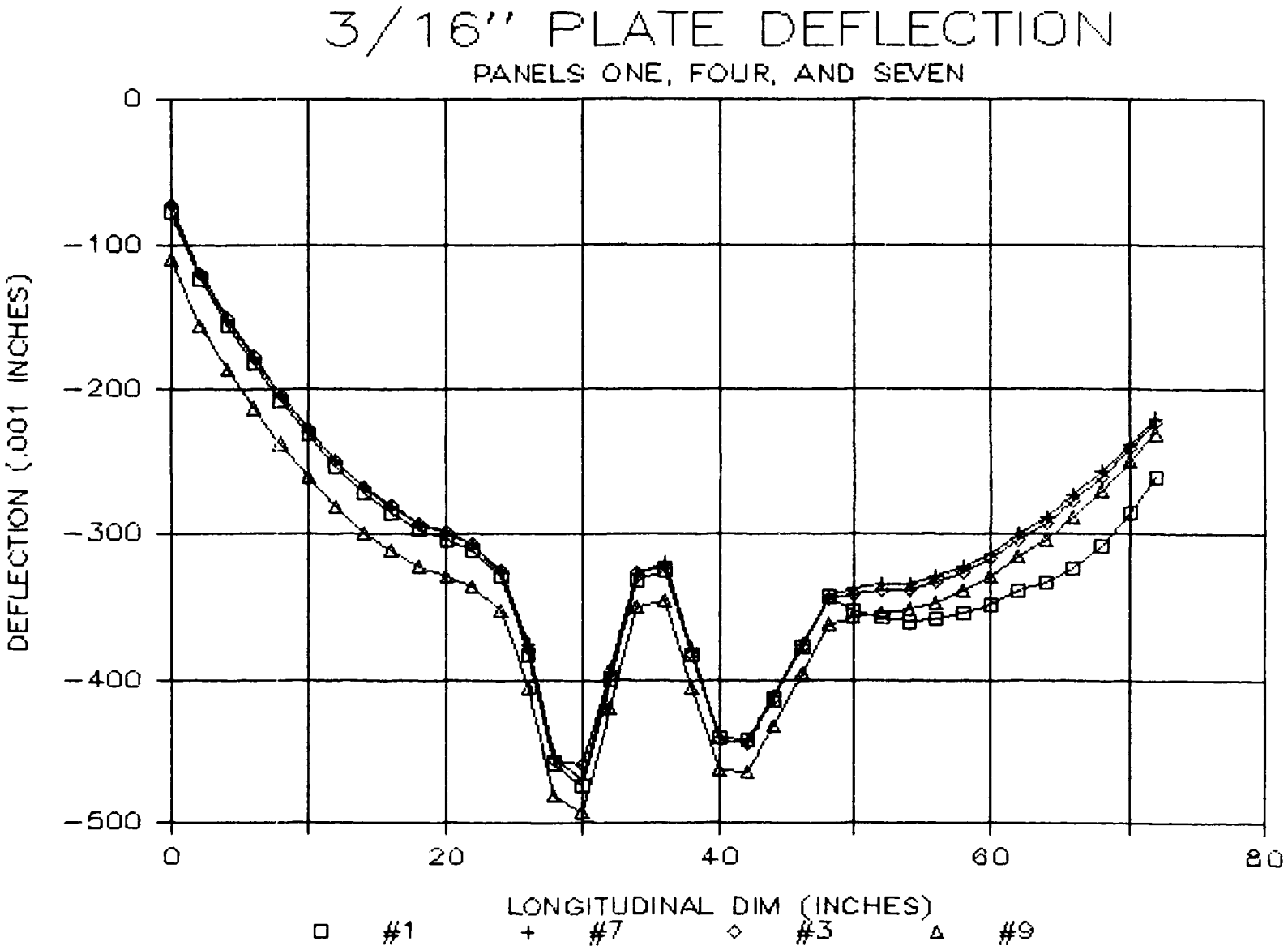

3/16" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
WELD
#5
#4
#2
#8
#6

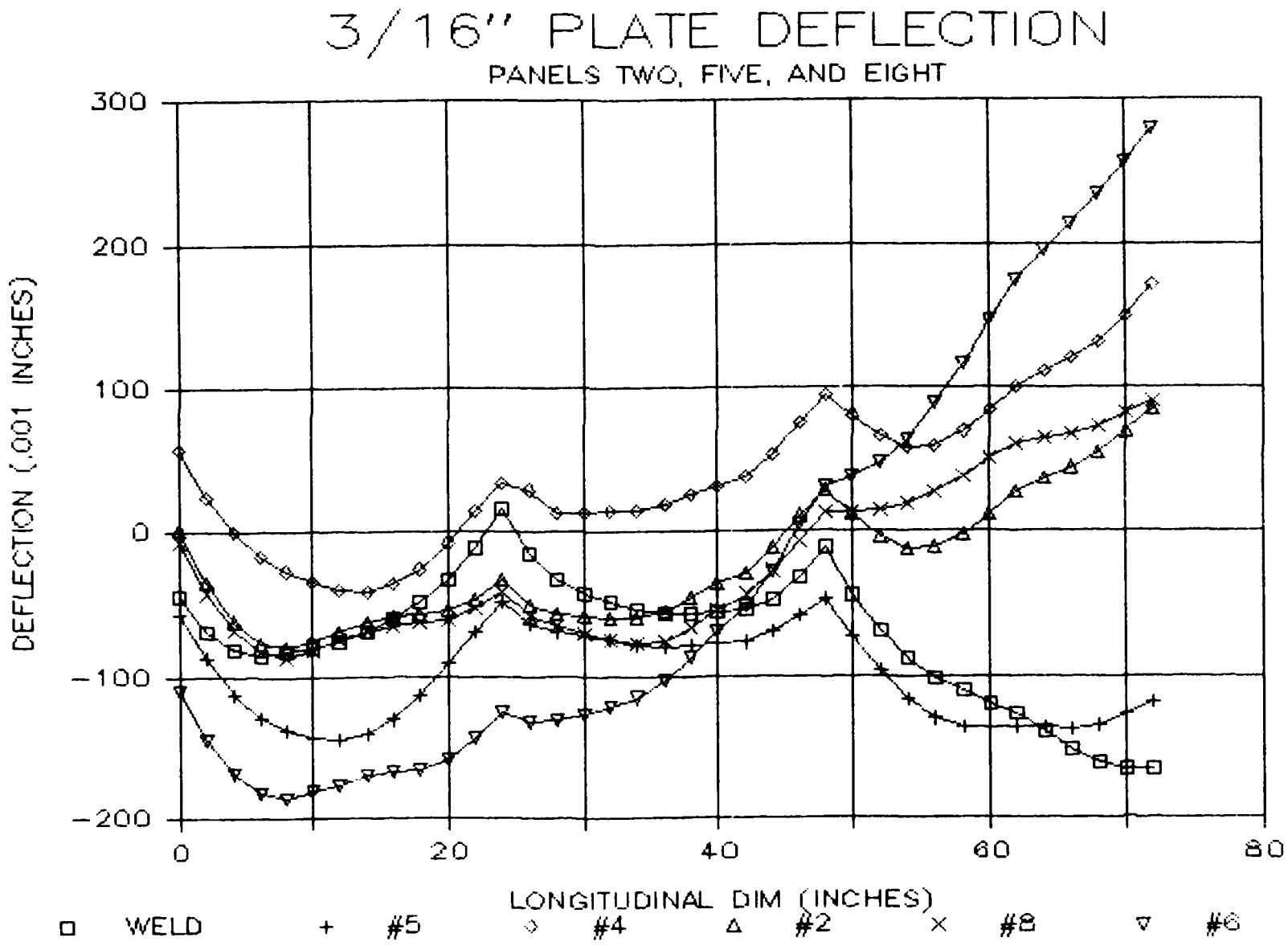

3/16" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
-200
-220
-240
-260
-280
-300
-320
-340
-360
-380
-400
-420
-440
-460
-480
-500
0
10
20
30
40
TRANSVERSE DIM (INCHES)
□ #1
+ #7
◇ #3
△ #9

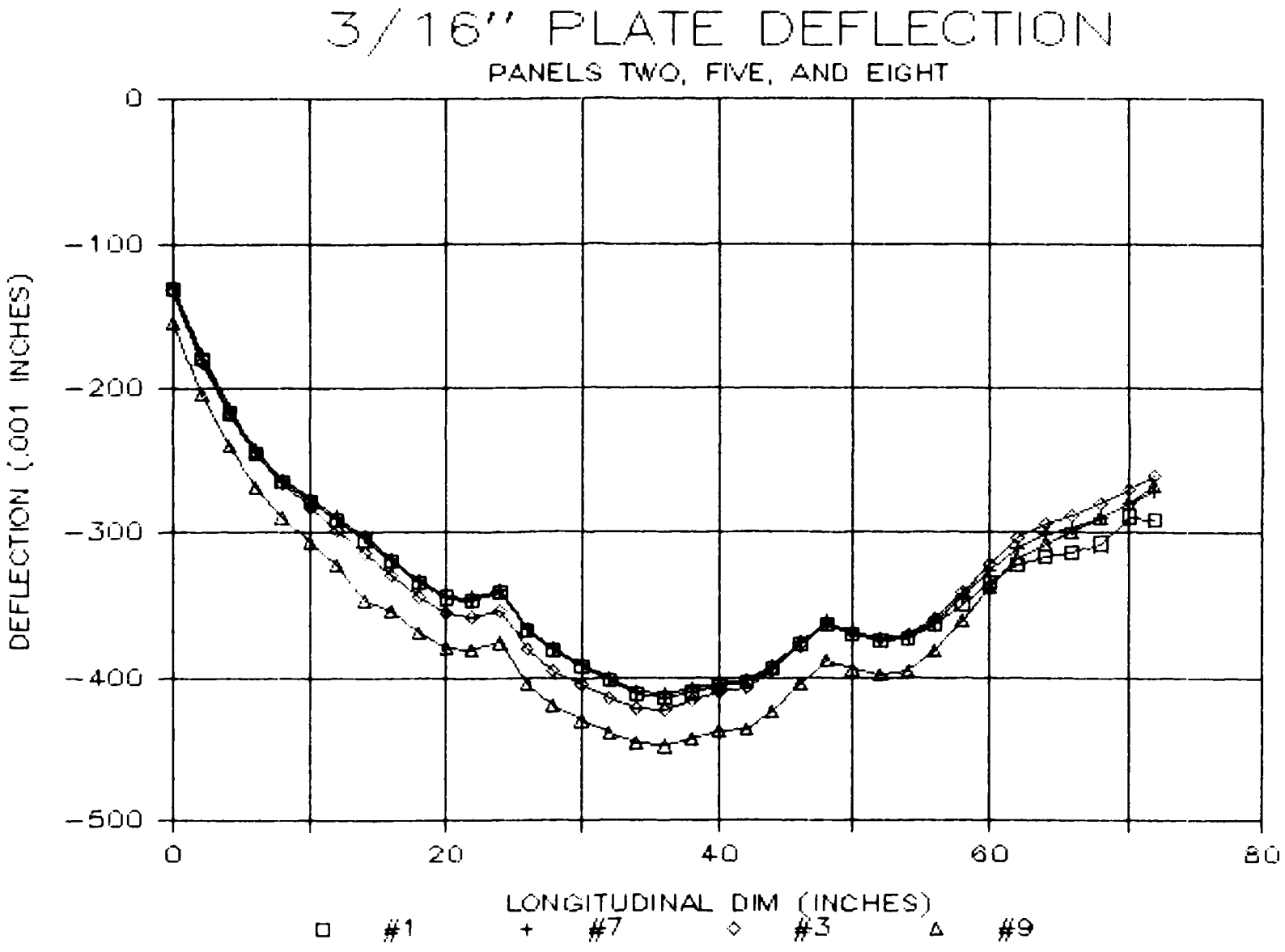

3/16" PLATE DEFLECTION
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
200
150
100
50
0
-50
-100
-150
-200
0
10
20
30
40
TRANSVERSE DIM (INCHES)
WELD
#5
#4
#2
#8
#6

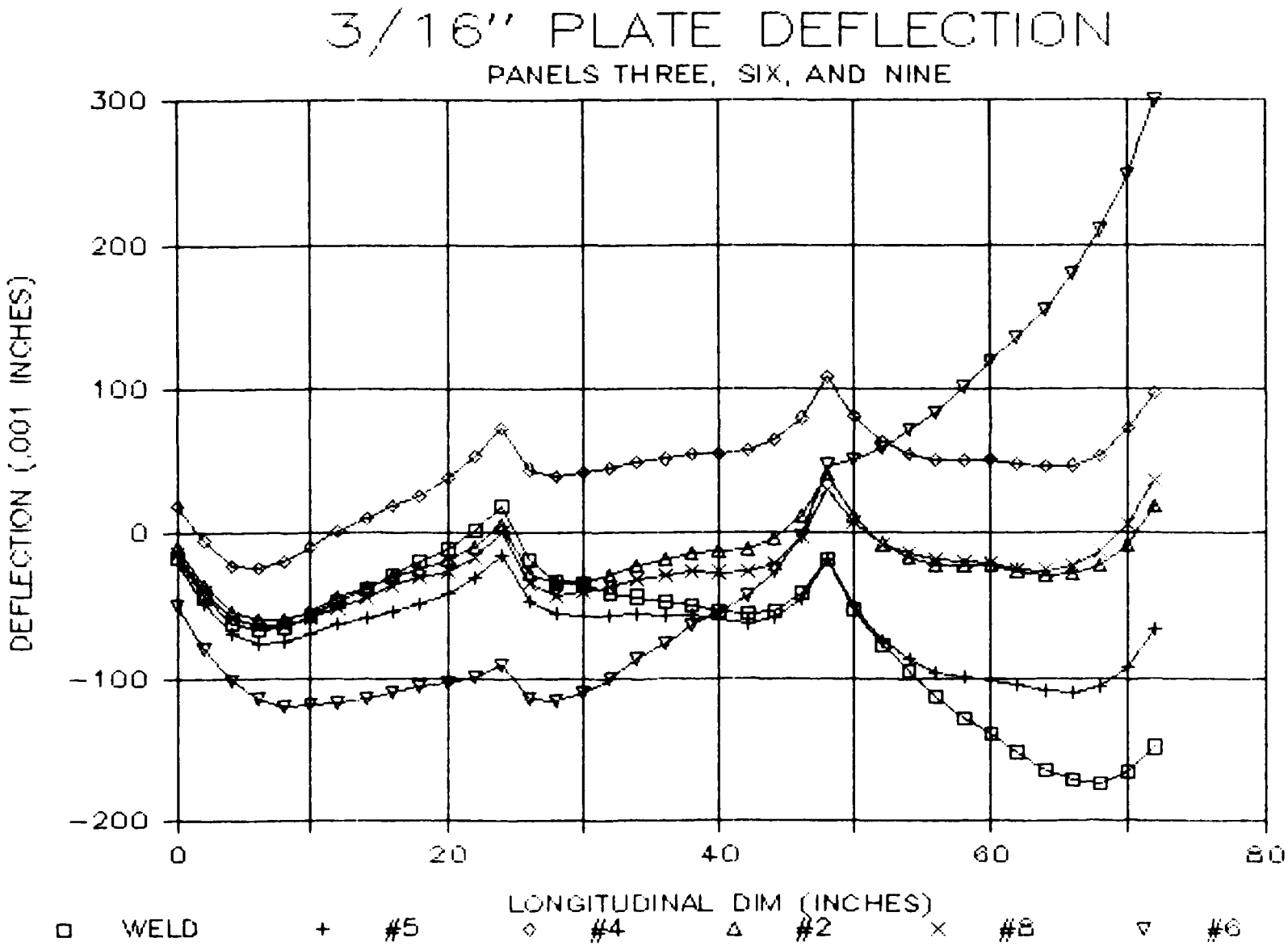

3/16" PLATE DEFLECTION
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
-140
-160
-180
-200
-220
-240
-260
-280
-300
-320
-340
-360
-380
-400
-420
-440
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#1
#7
#3
#9

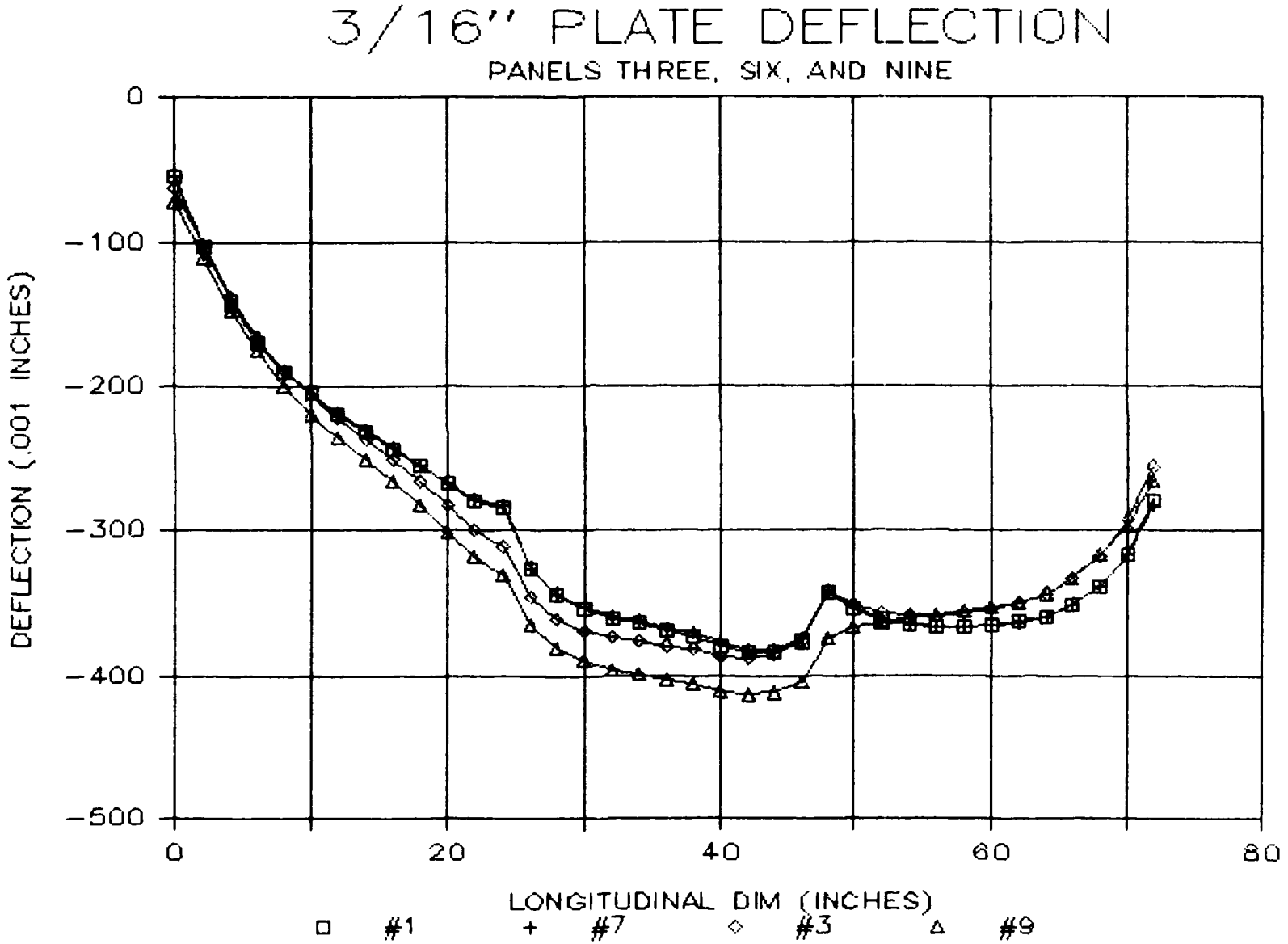

3/16" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN
300
200
100
0
-100
-200
DEFLECTION (.001 INCHES)
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
WELD
#5
#4
#2
#8
#6


3/16" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
0
-100
-200
-300
-400
-500
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#1
#7
#3
#9


3/16" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
300
200
100
0
-100
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
WELD
#5
#4
#2
#8
#6


3/16" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
0
-100
-200
-300
-400
-500
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#1
#7
#3
#9

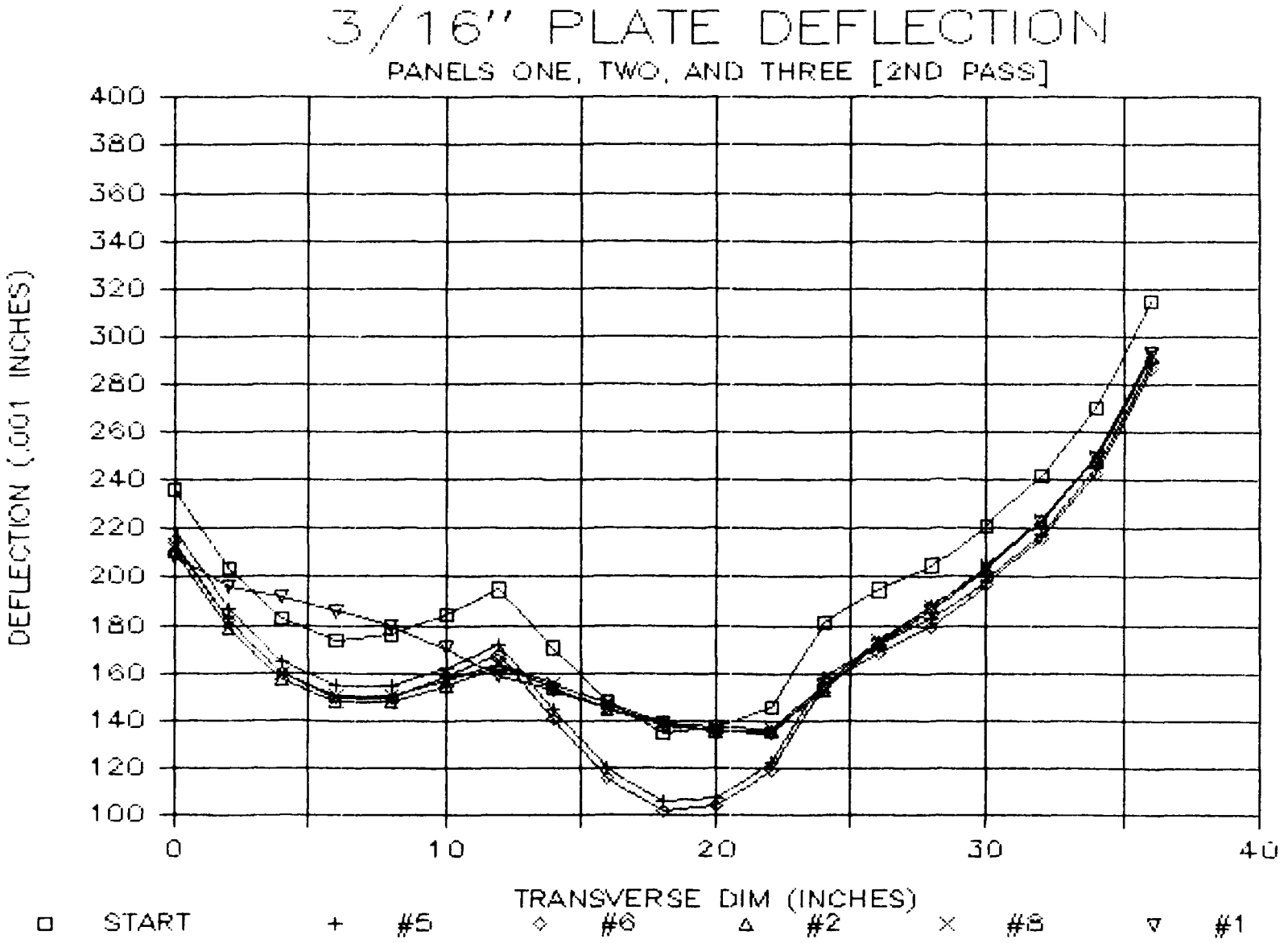

3/16" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
300
200
100
0
-100
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
WELD
#5
#4
#2
#8
#6

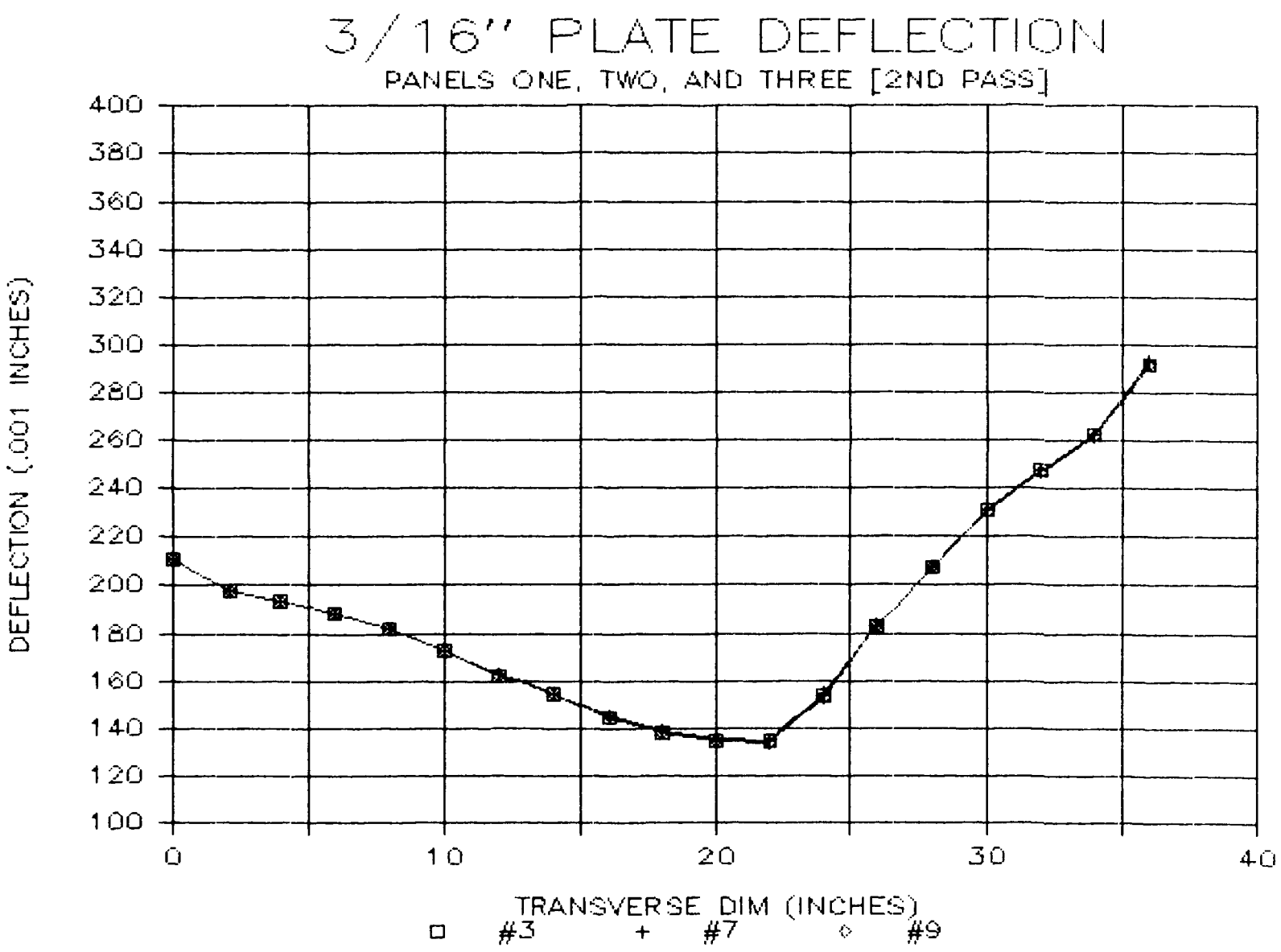

3/16" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE
0
-100
-200
-300
-400
-500
DEFLECTION (.001 INCHES)
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#1
#7
#3
#9

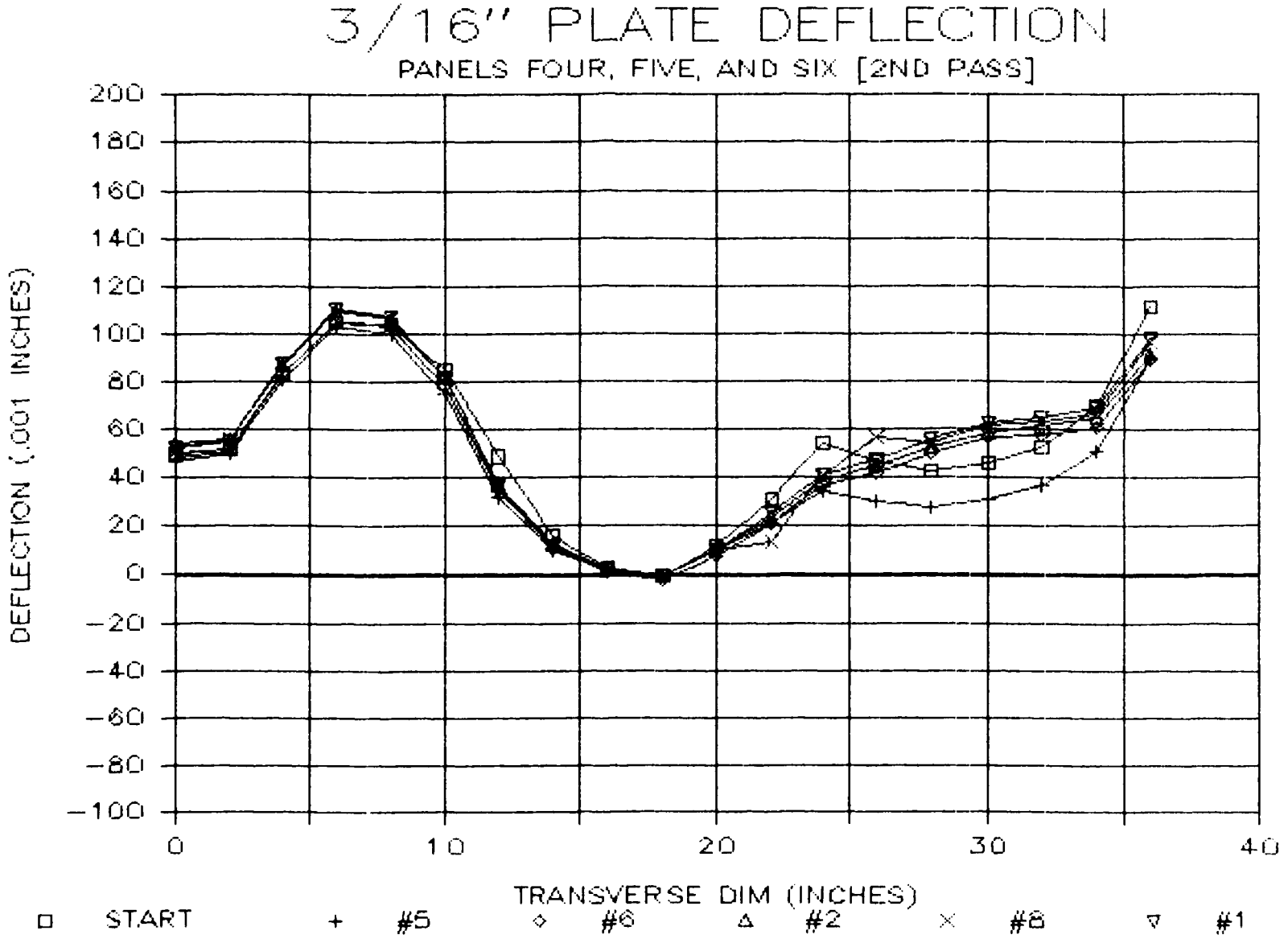
APPENDIX I

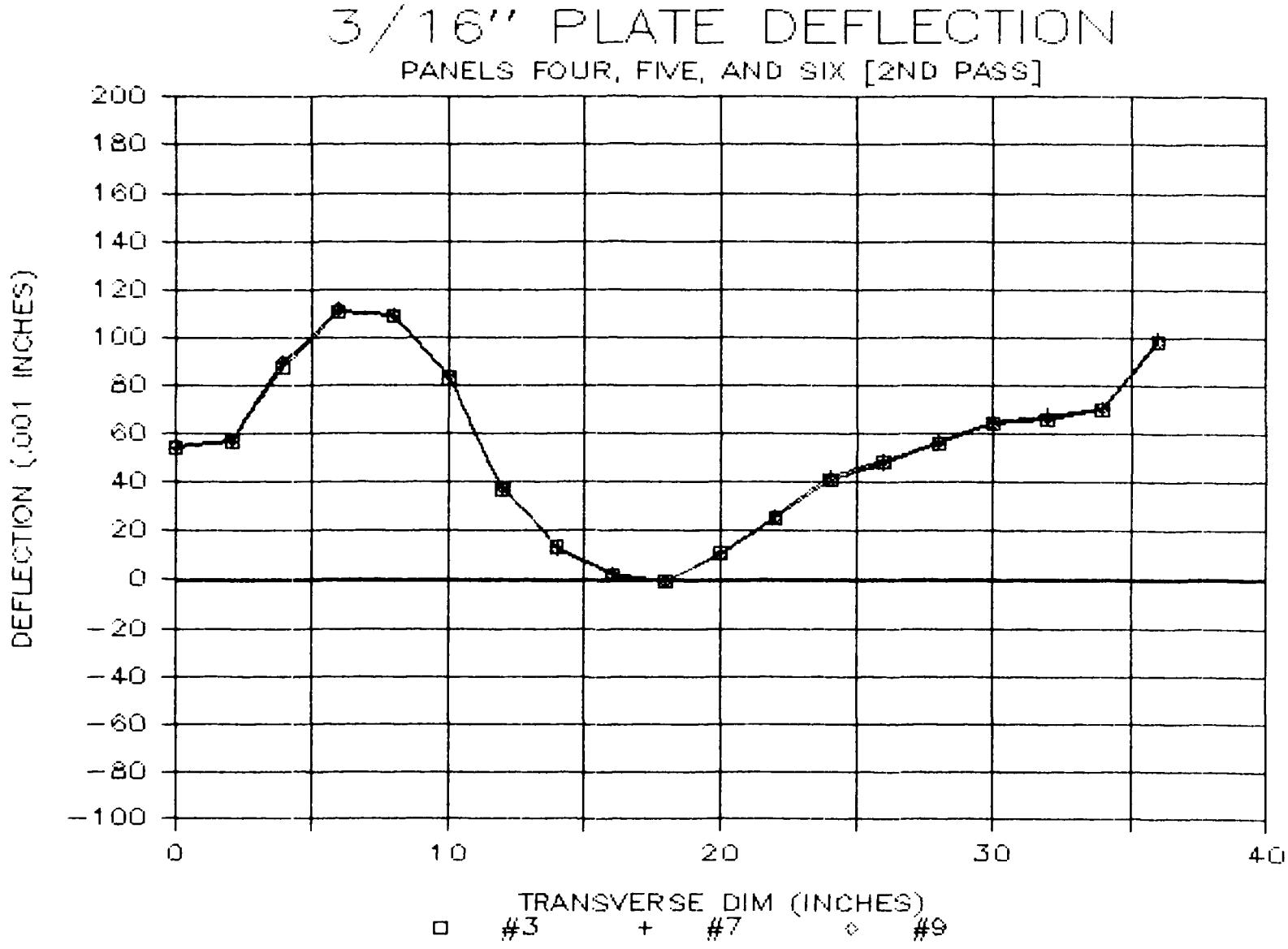
GRAPHS OF THE 3/16" STIFFENED PLATE MID-PANEL DEFLECTIONS AFTER THE SECOND LINE HEATING PASS

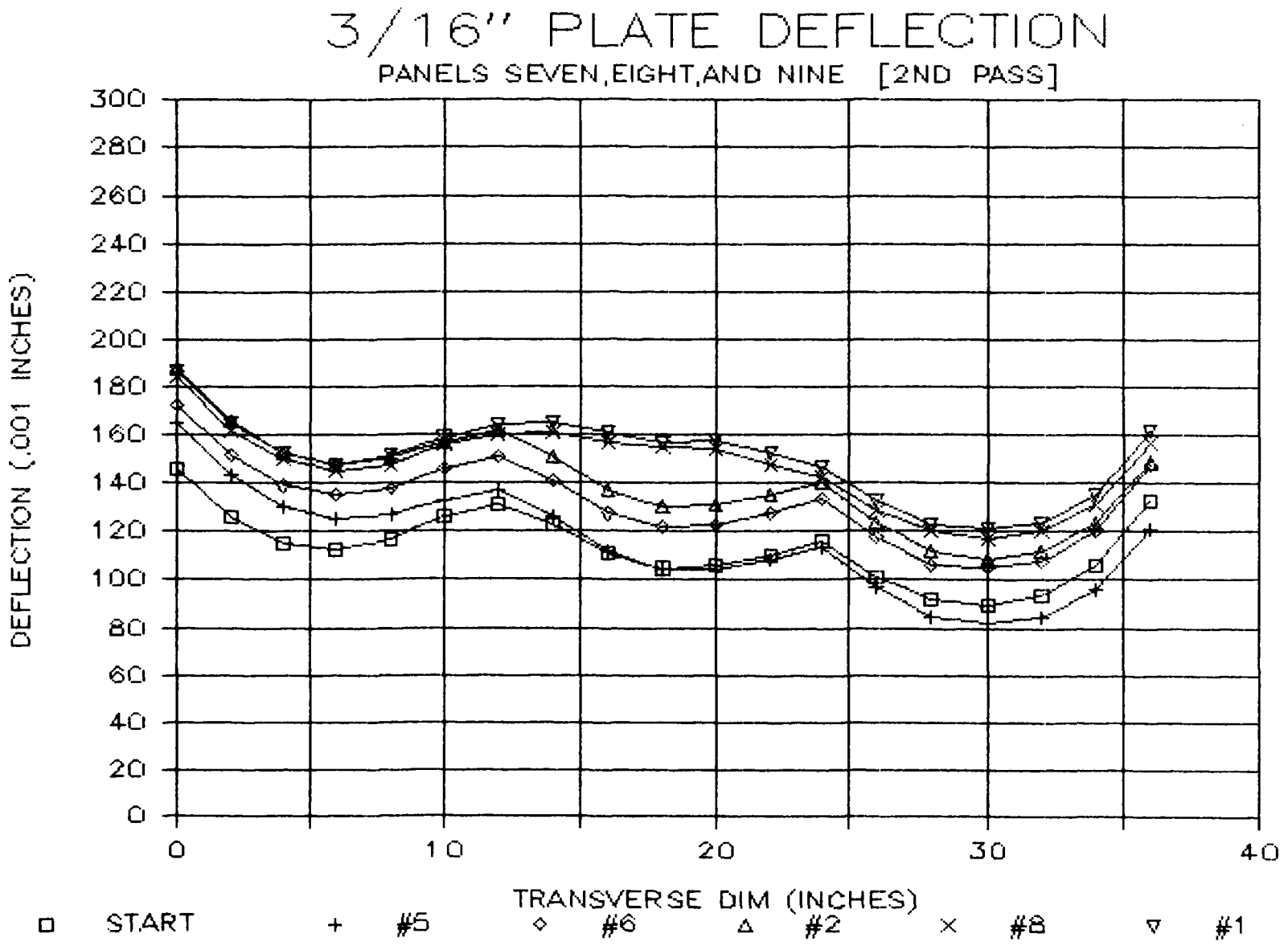
The horizontal coordinate is transverse or longitudinal displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

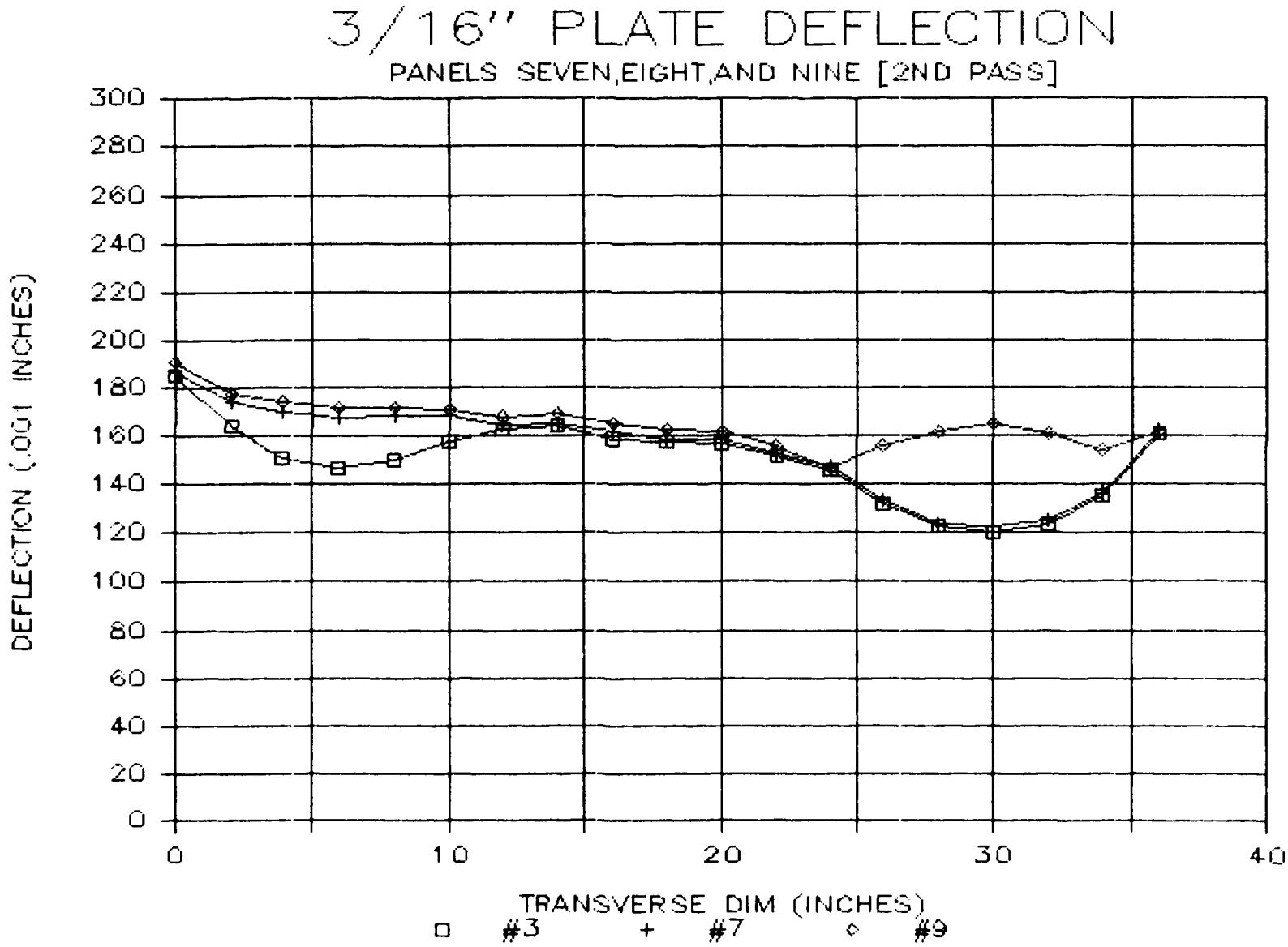

3/16" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE [2ND PASS]
DEFLECTION (.001 INCHES)
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
START
#5
#6
#2
#8
#1

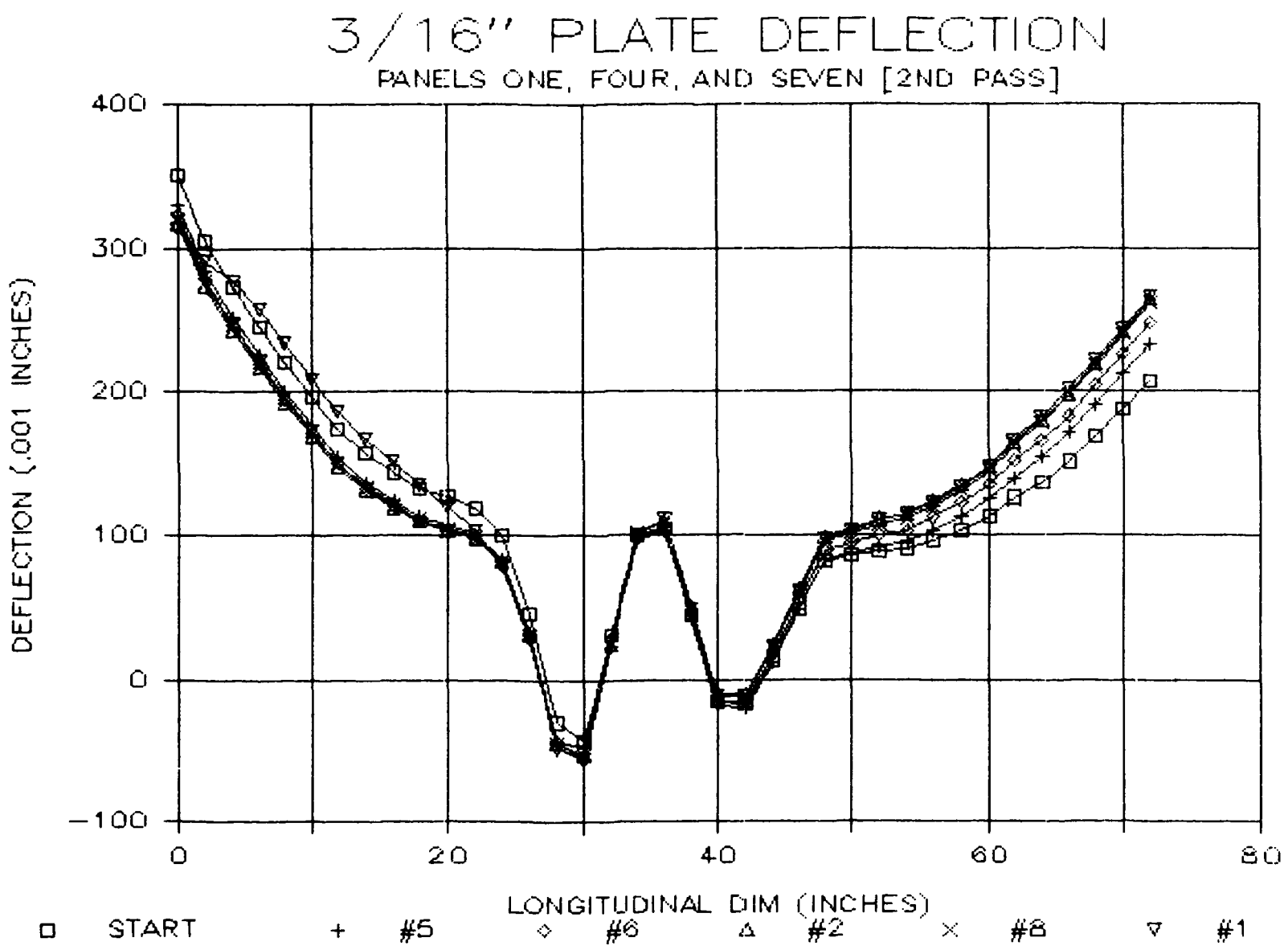

3/16" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE [2ND PASS]
DEFLECTION (.001 INCHES)
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#3
#7
#9

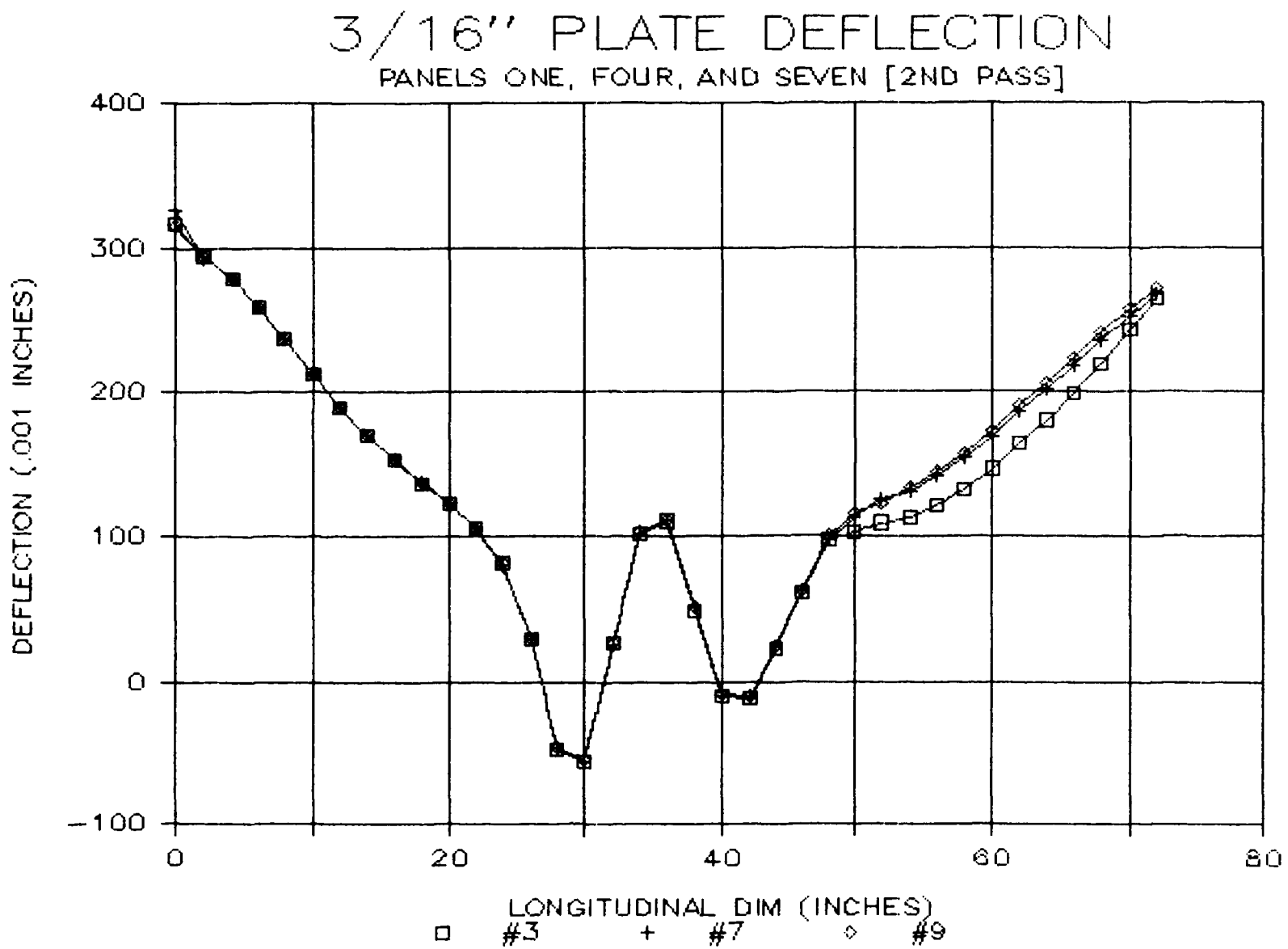

3/16" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX [2ND PASS]
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
START
#5
#6
#2
#8
#1

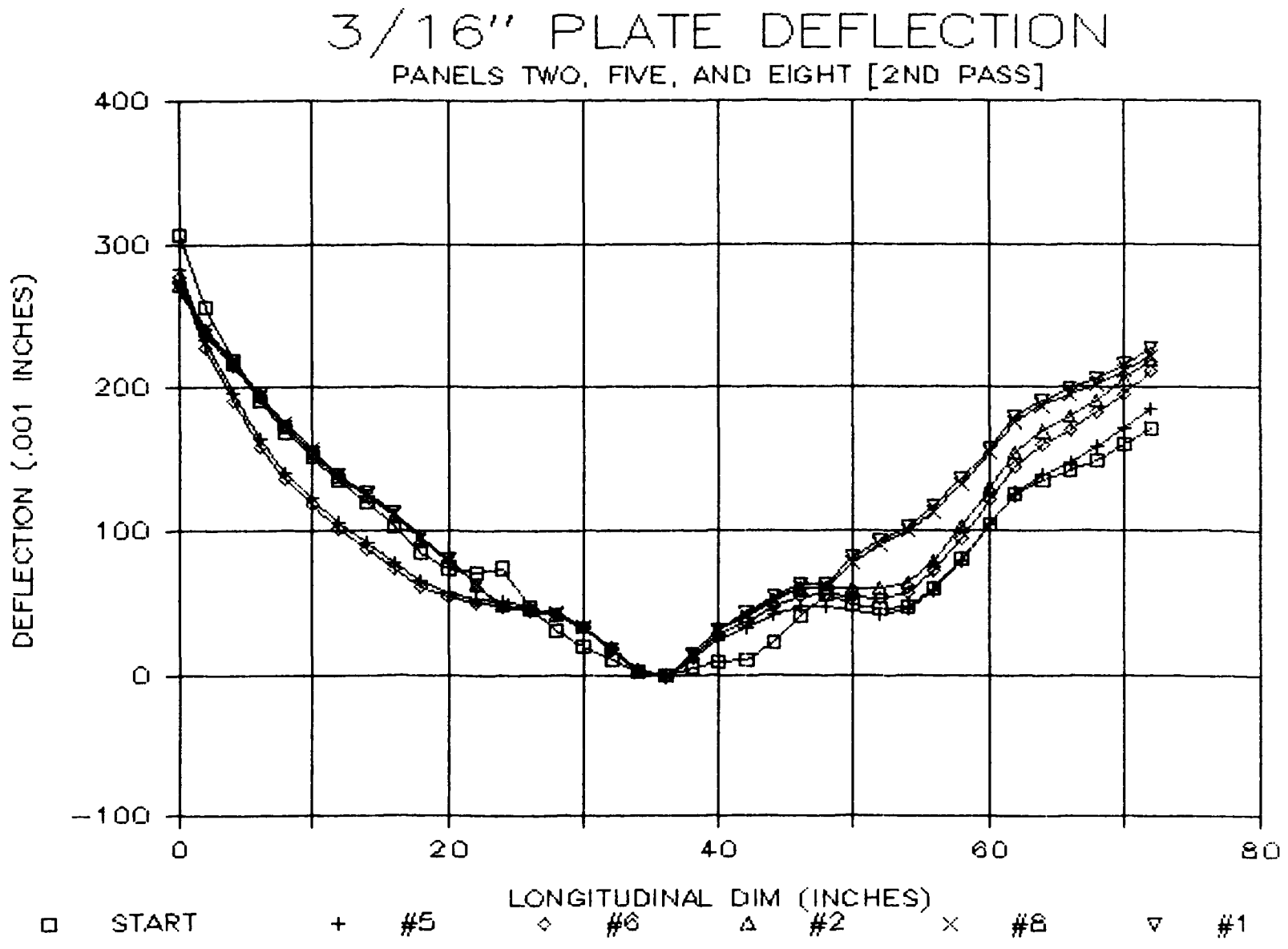

3/16" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX [2ND PASS]
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#3
#7
#9

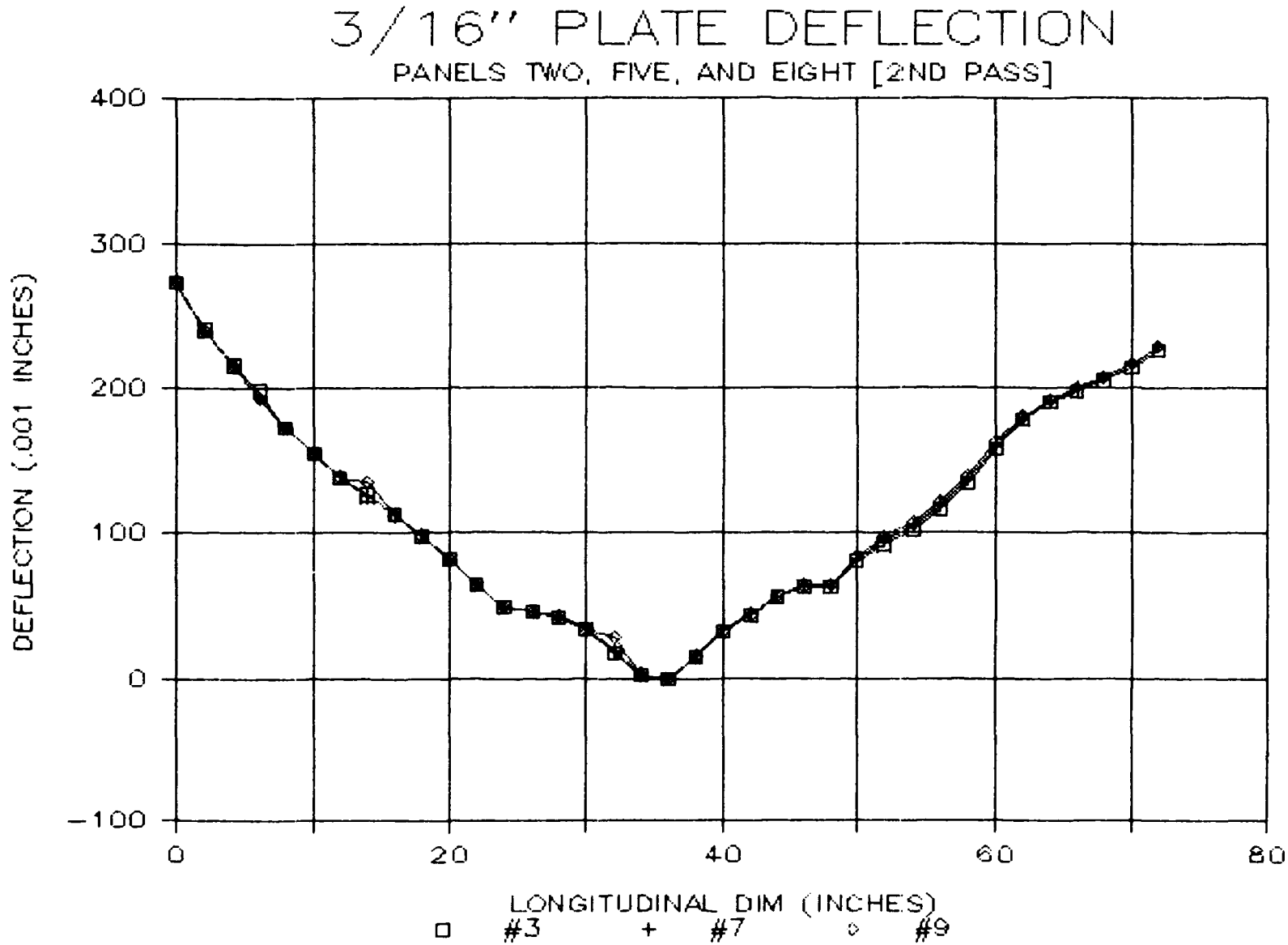

3/16" PLATE DEFLECTION
PANELS SEVEN,EIGHT,AND NINE [2ND PASS]
DEFLECTION (.001 INCHES)
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
TRANSVERSE DIM (INCHES)
START
#5
#6
#2
#8
#1

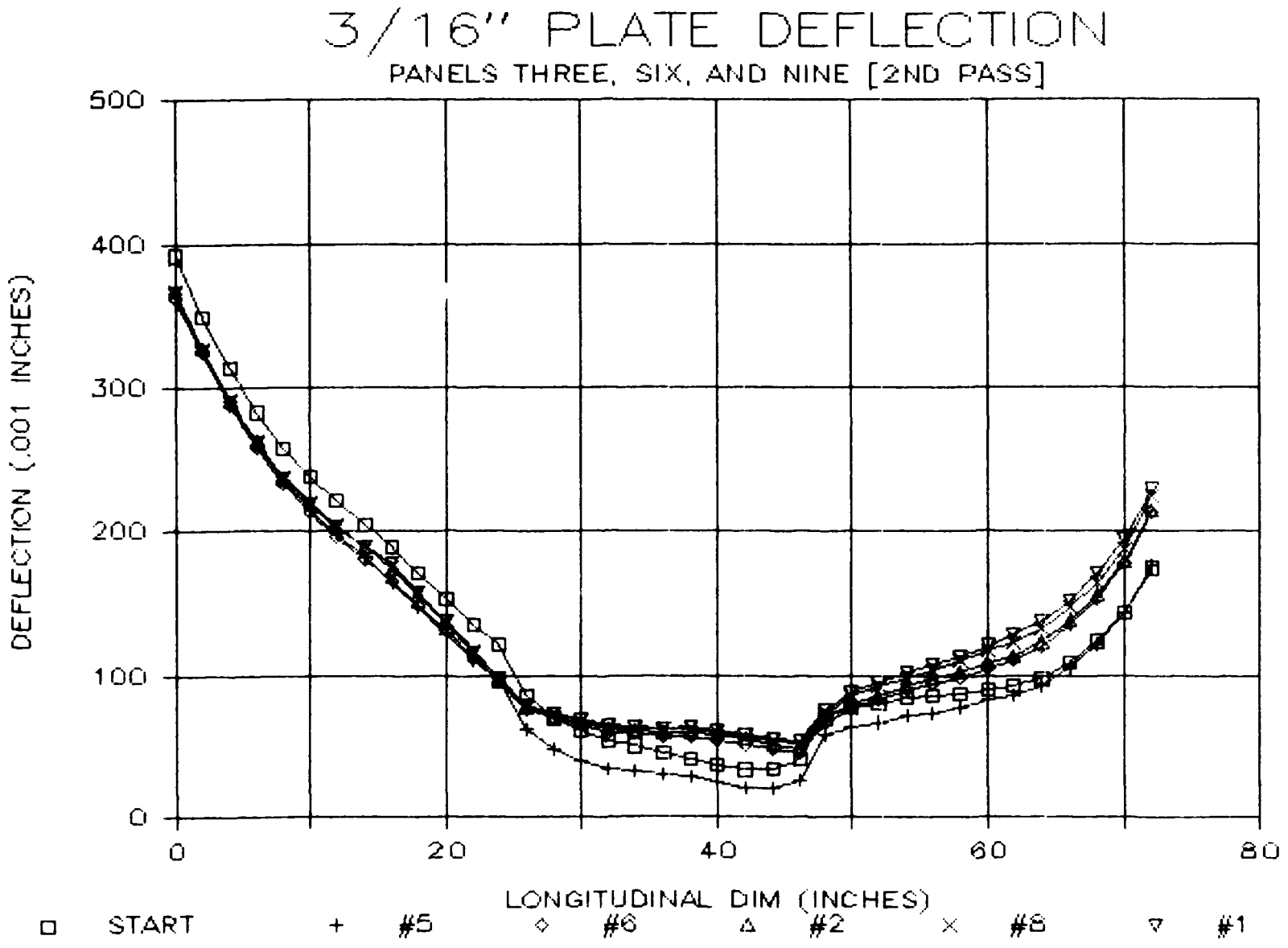

3/16" PLATE DEFLECTION
PANELS SEVEN,EIGHT,AND NINE [2ND PASS]
DEFLECTION (.001 INCHES)
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#3
#7
#9

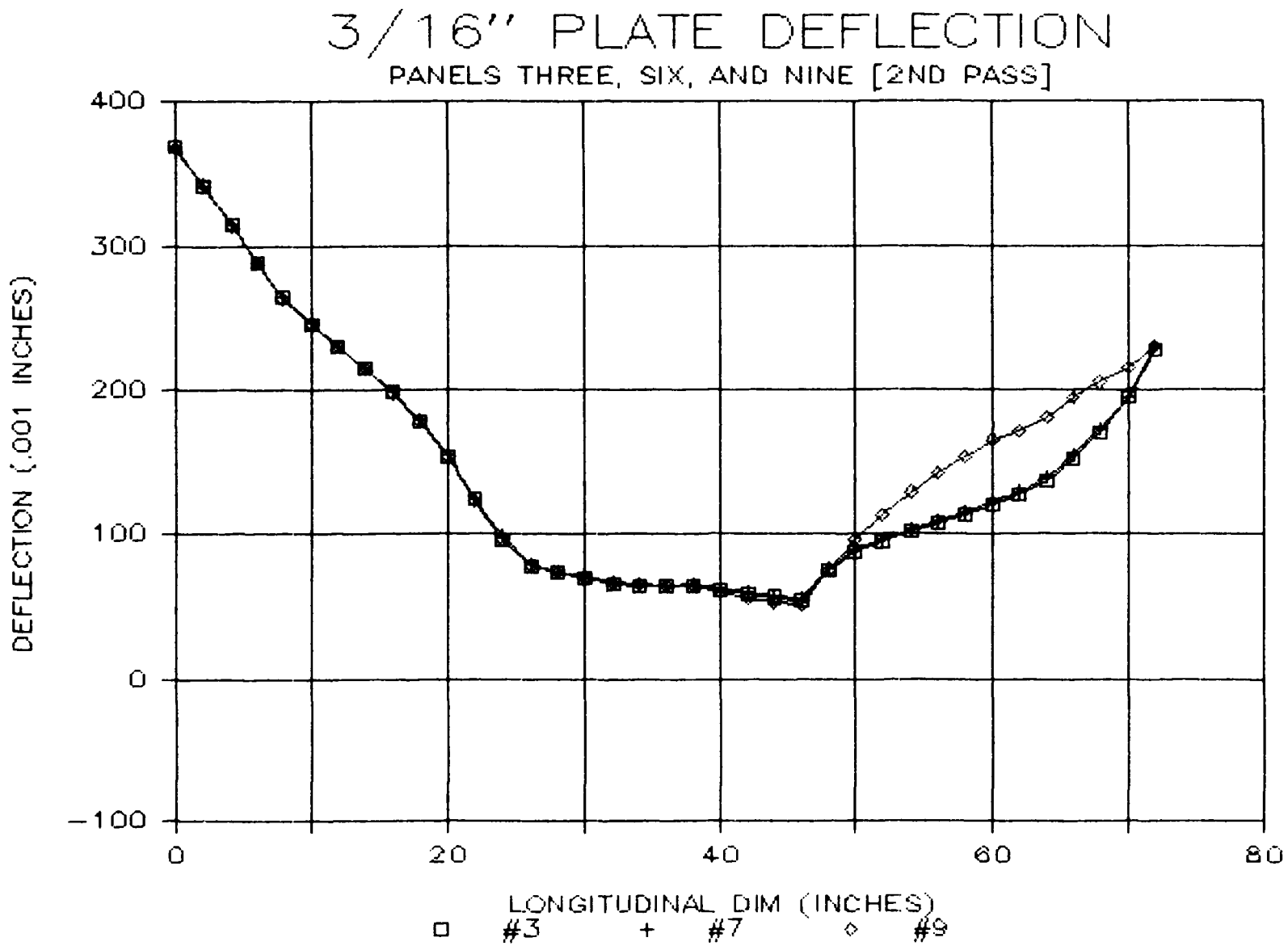

3/16" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN [2ND PASS]
DEFLECTION (.001 INCHES)
400
300
200
100
0
-100
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
START
#5
#6
#2
#8
#1


3/16" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN [2ND PASS]
400
300
200
100
0
-100
DEFLECTION (.001 INCHES)
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#3
#7
#9


3/16" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT [2ND PASS]
DEFLECTION (.001 INCHES)
400
300
200
100
0
-100
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
START
#5
#6
#2
#8
#1


3/16" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT [2ND PASS]
DEFLECTION (.001 INCHES)
400
300
200
100
0
-100
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
□ #3 + #7 ◇ #9

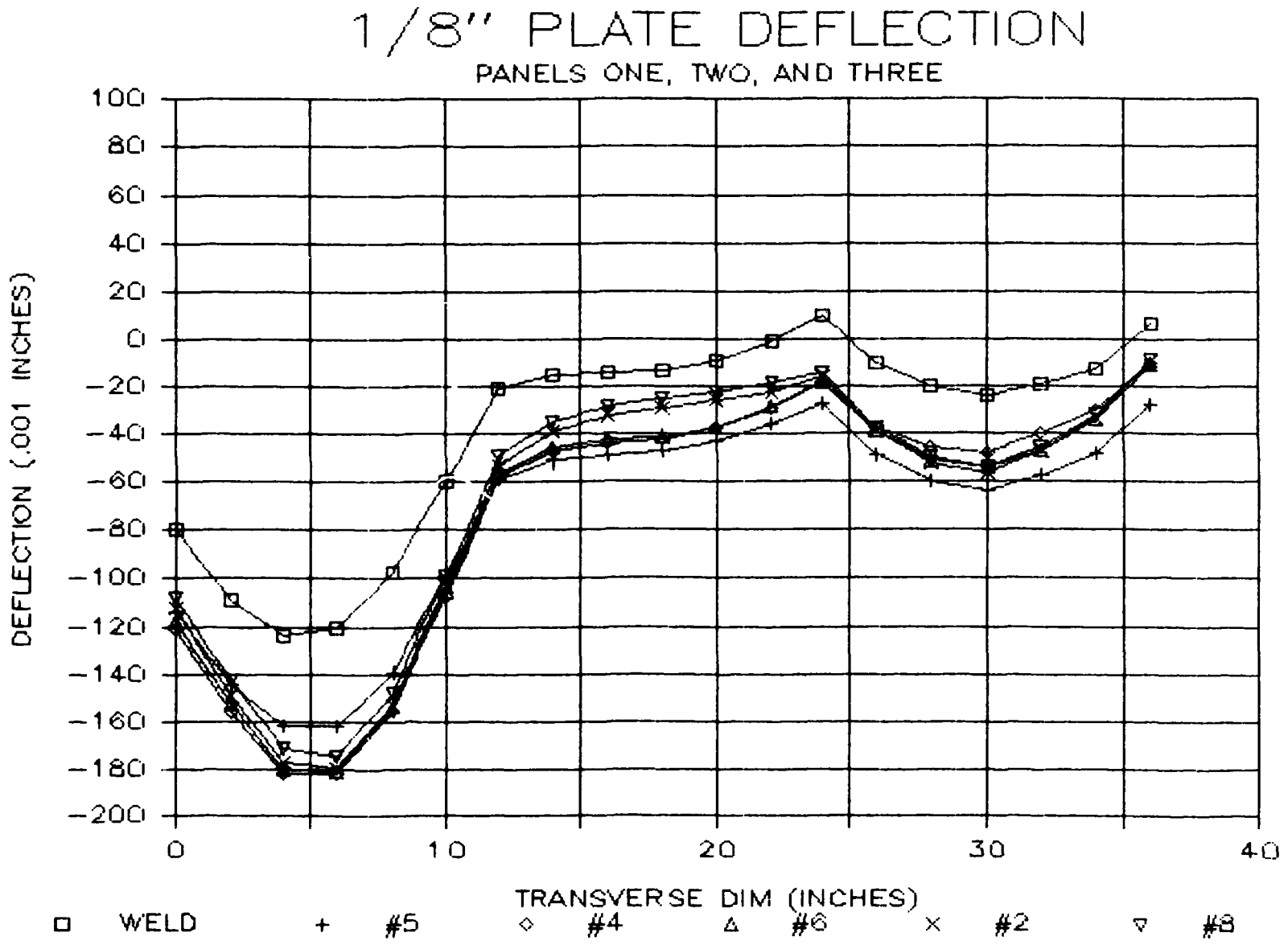

3/16" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE [2ND PASS]
DEFLECTION (.001 INCHES)
500
400
300
200
100
0
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
START
#5
#6
#2
#8
#1

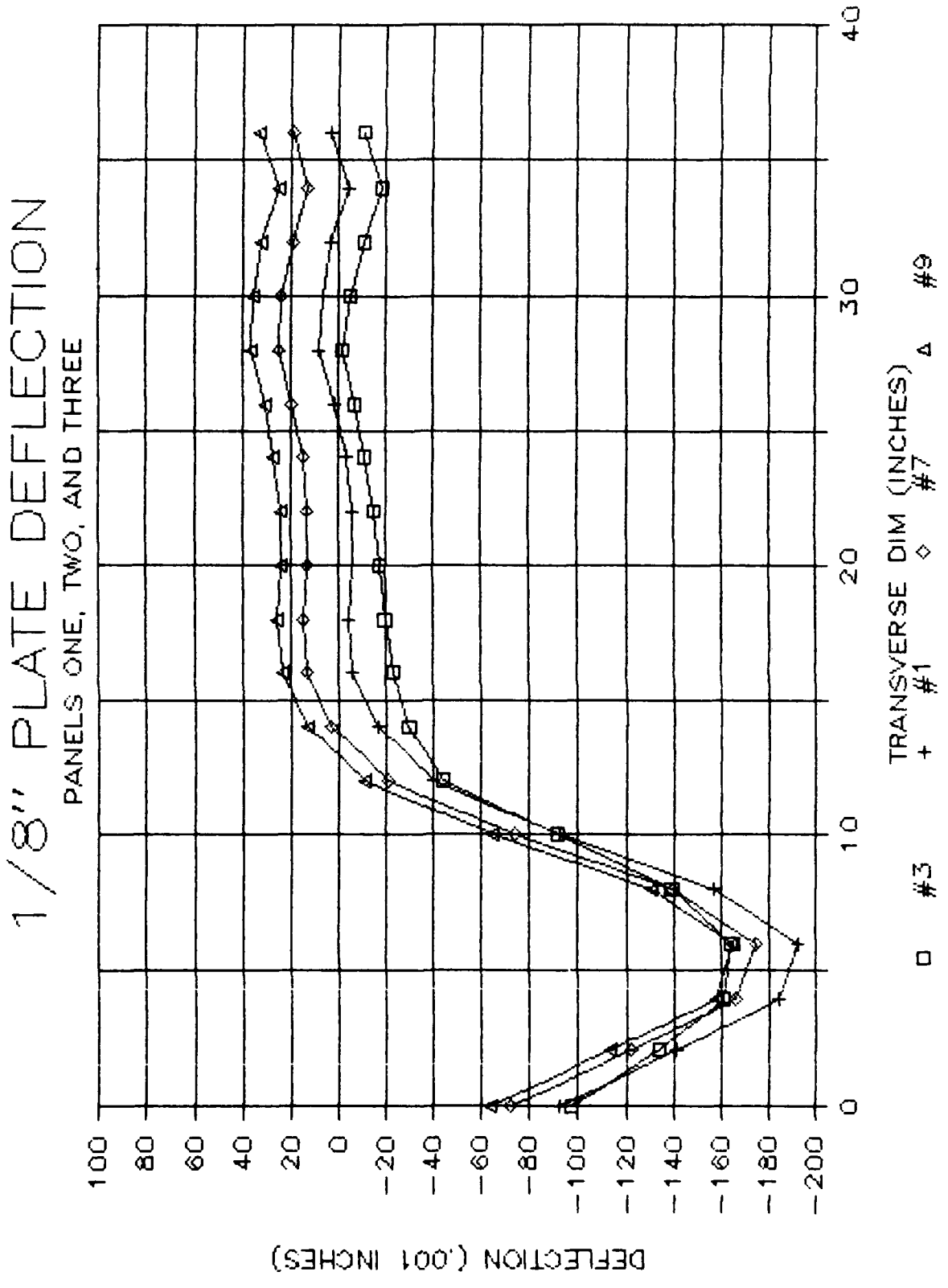

3/16" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE [2ND PASS]
400
300
200
100
0
-100
DEFLECTION (.001 INCHES)
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#3
#7
#9

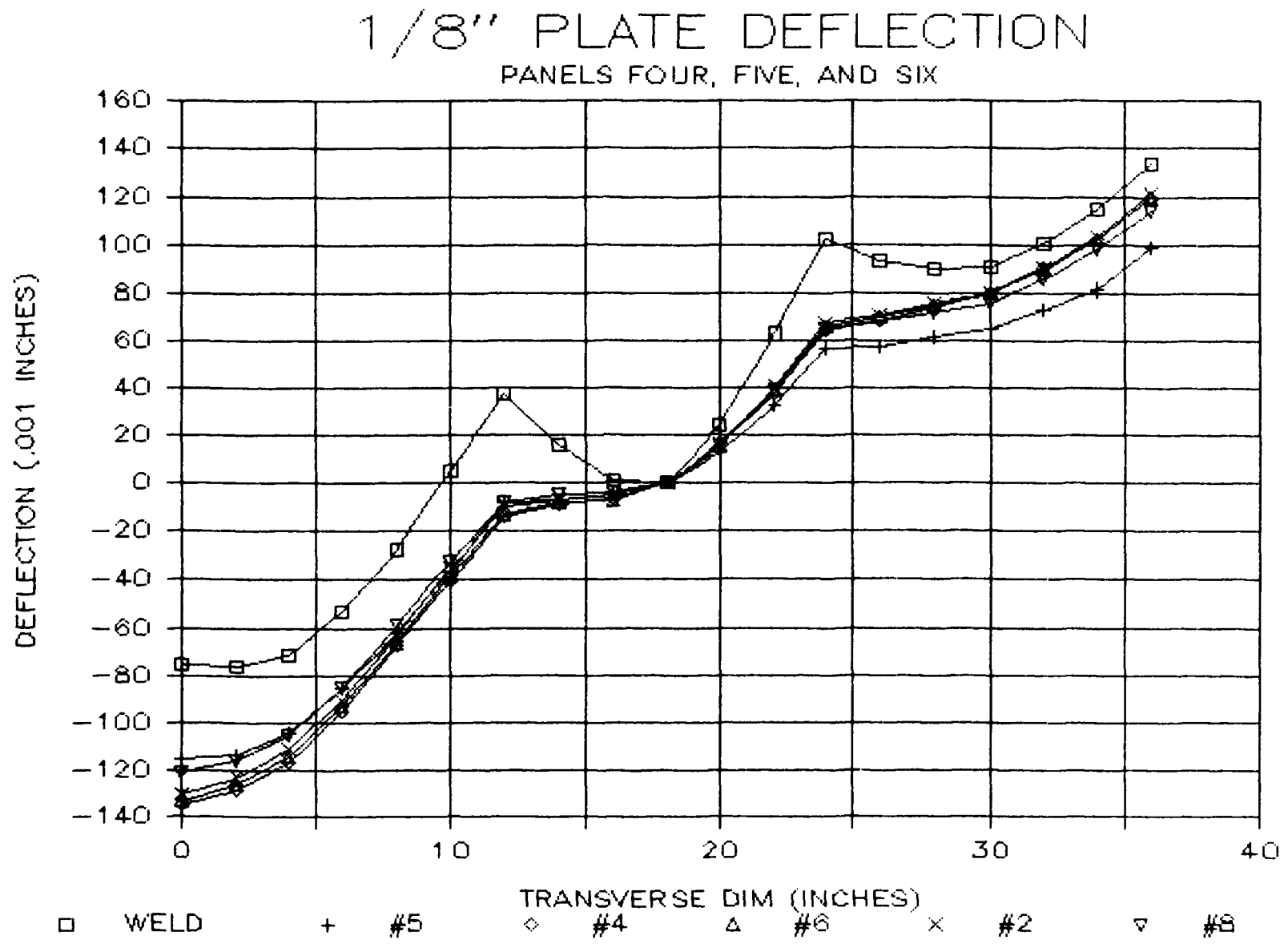
APPENDIX J

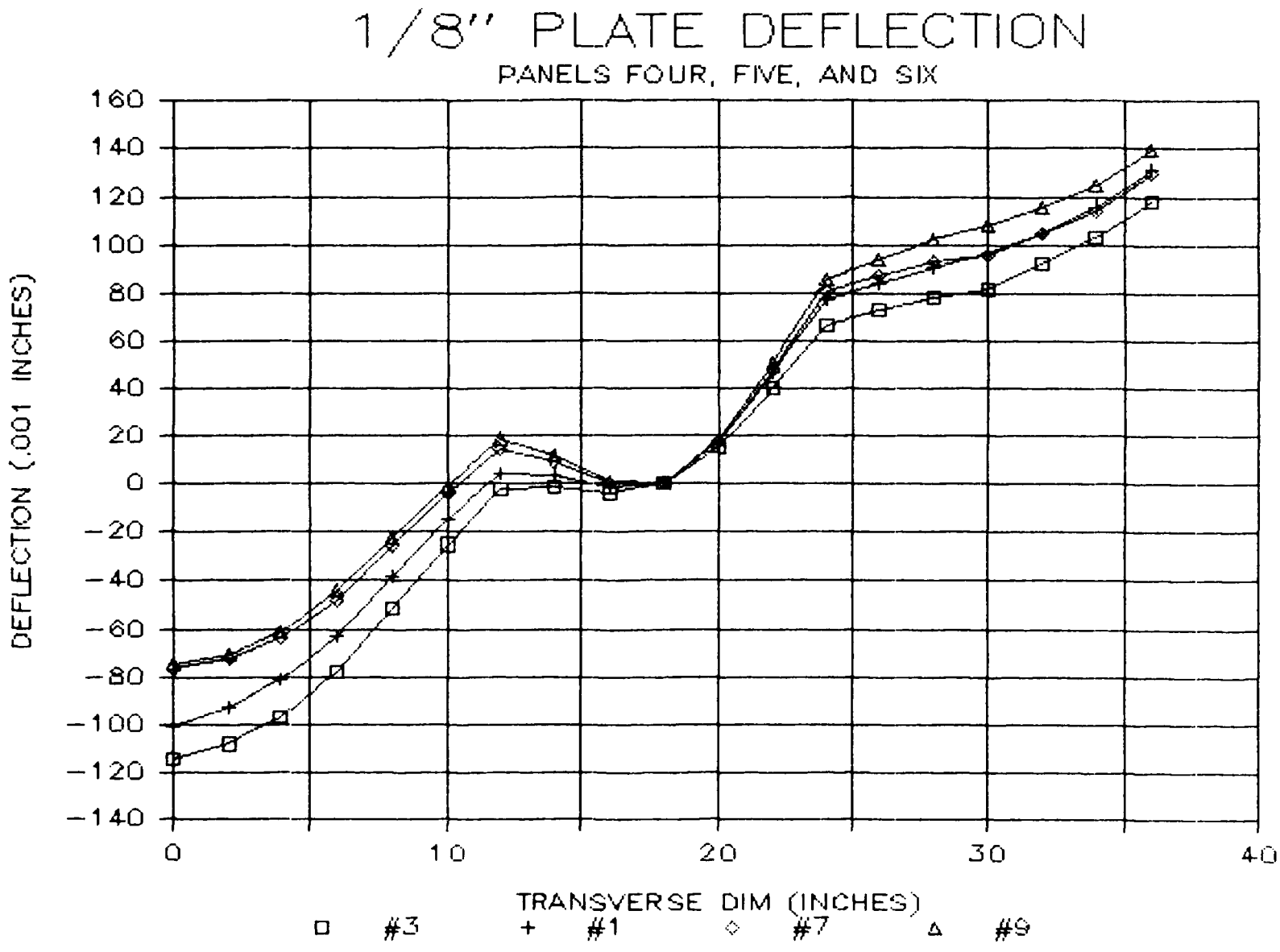
GRAPHS OF THE 1/8" STIFFENED PLATE MID-PANEL DEFLECTIONS AFTER THE FIRST LINE HEATING PASS

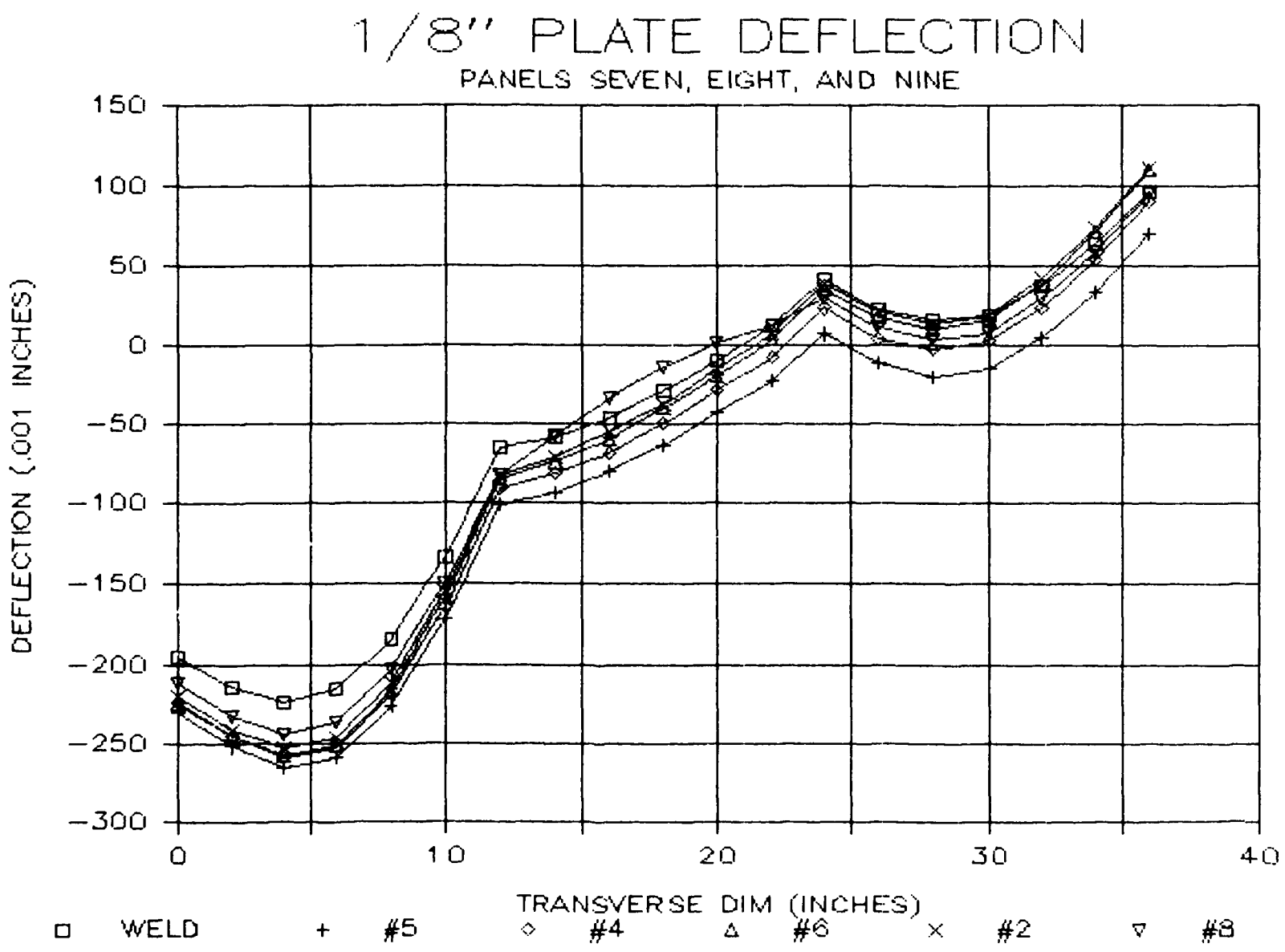
The horizontal coordinate is transverse or longitudinal displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

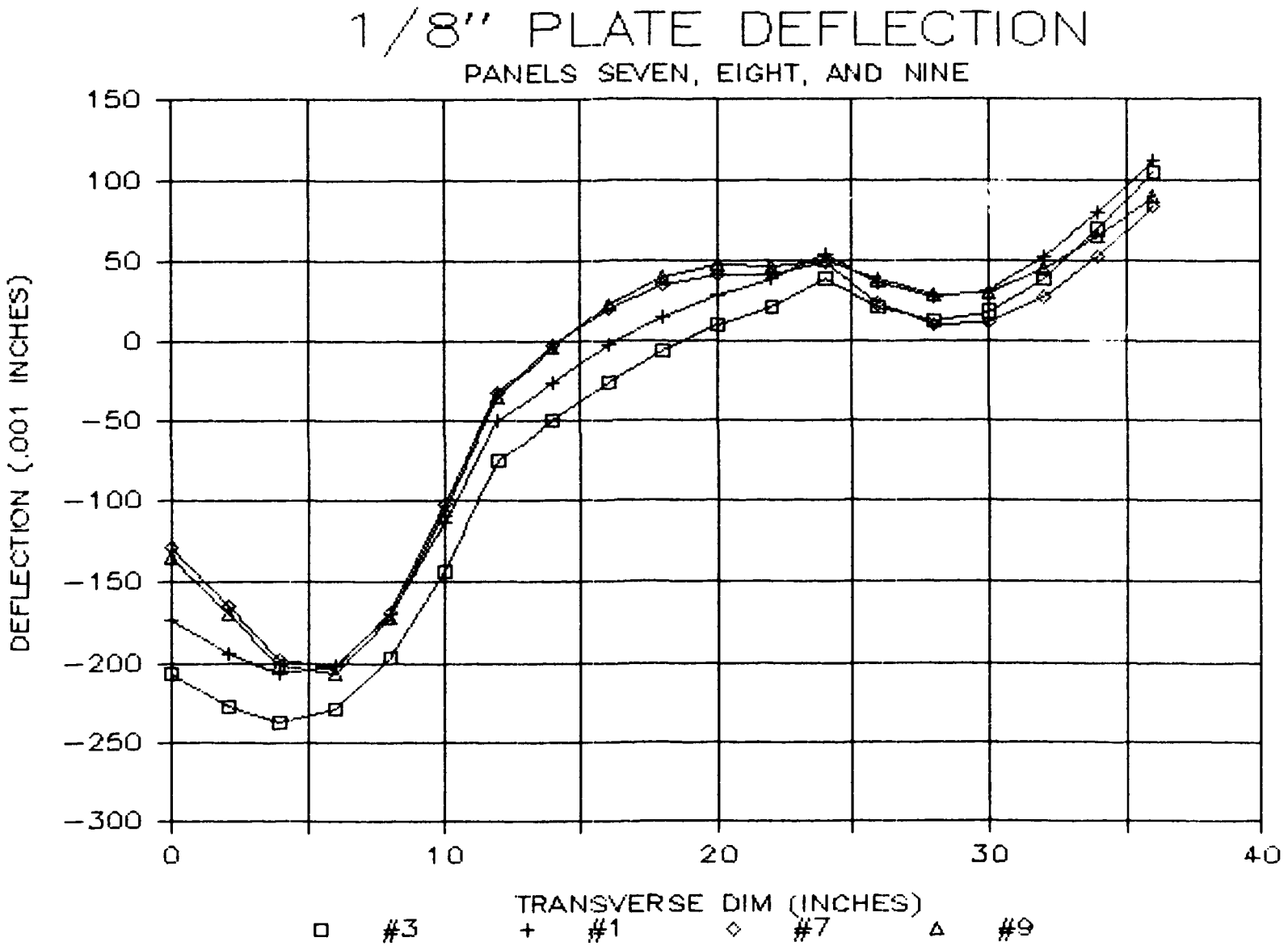

1/8" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
10
20
30
40
TRANSVERSE DIM (INCHES)
WELD
#5
#4
#6
#2
#8

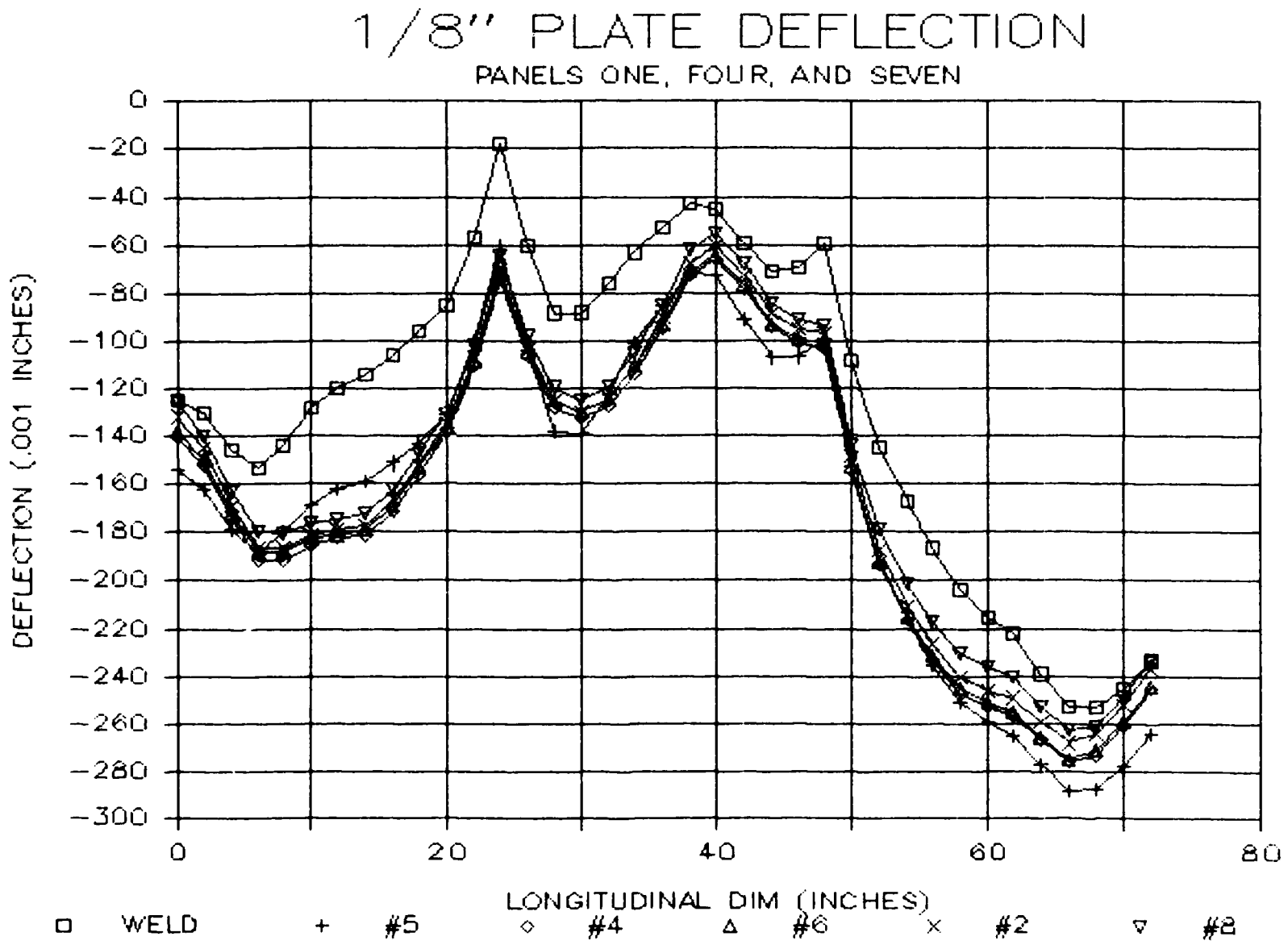

1/8" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
10
20
30
40
TRANSVERSE DIM (INCHES)
□ #3
+ #1
◇ #7
△ #9

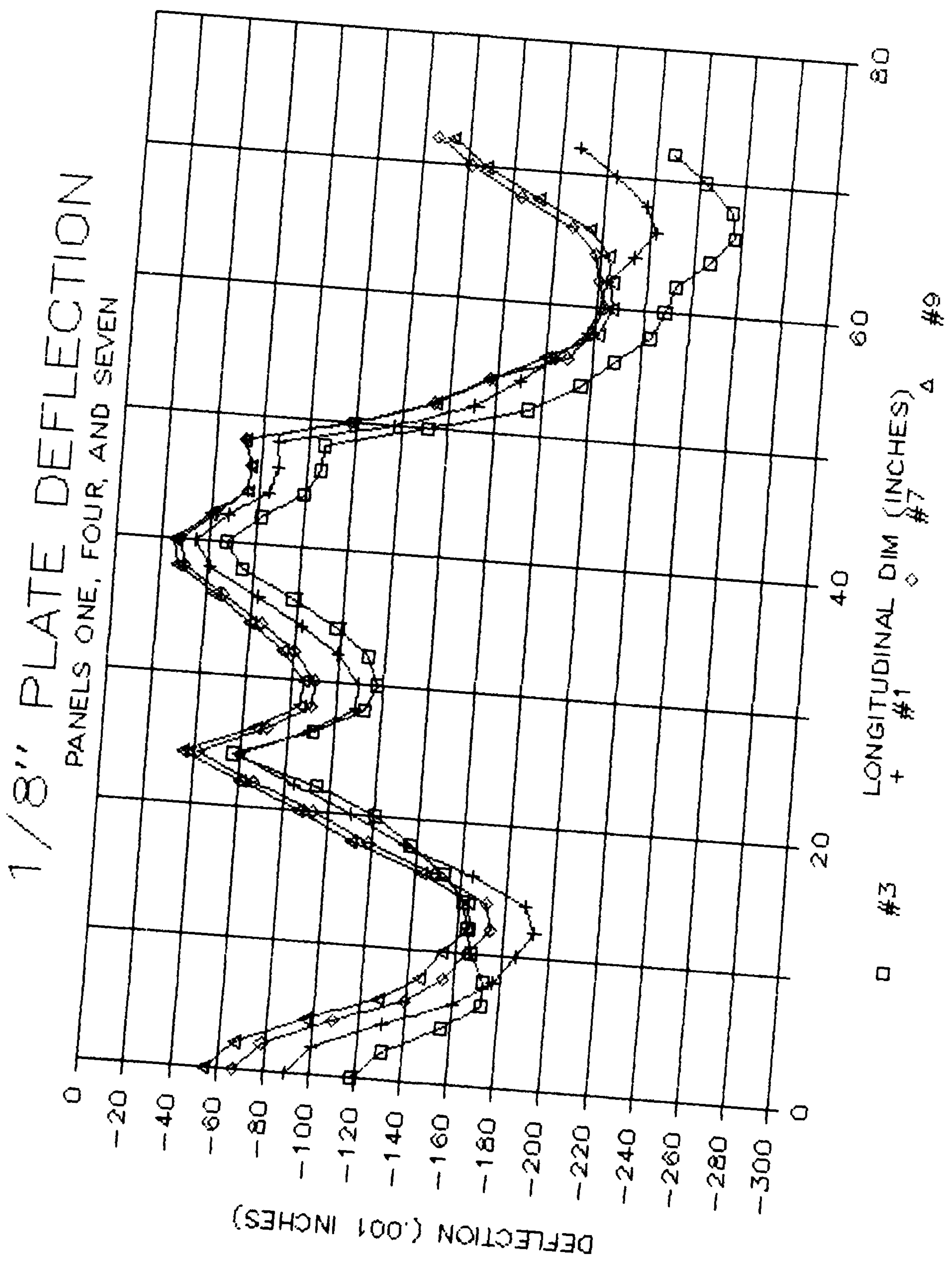

1/8" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
0
10
20
30
40
TRANSVERSE DIM (INCHES)
WELD
#5
#4
#6
#2
#8

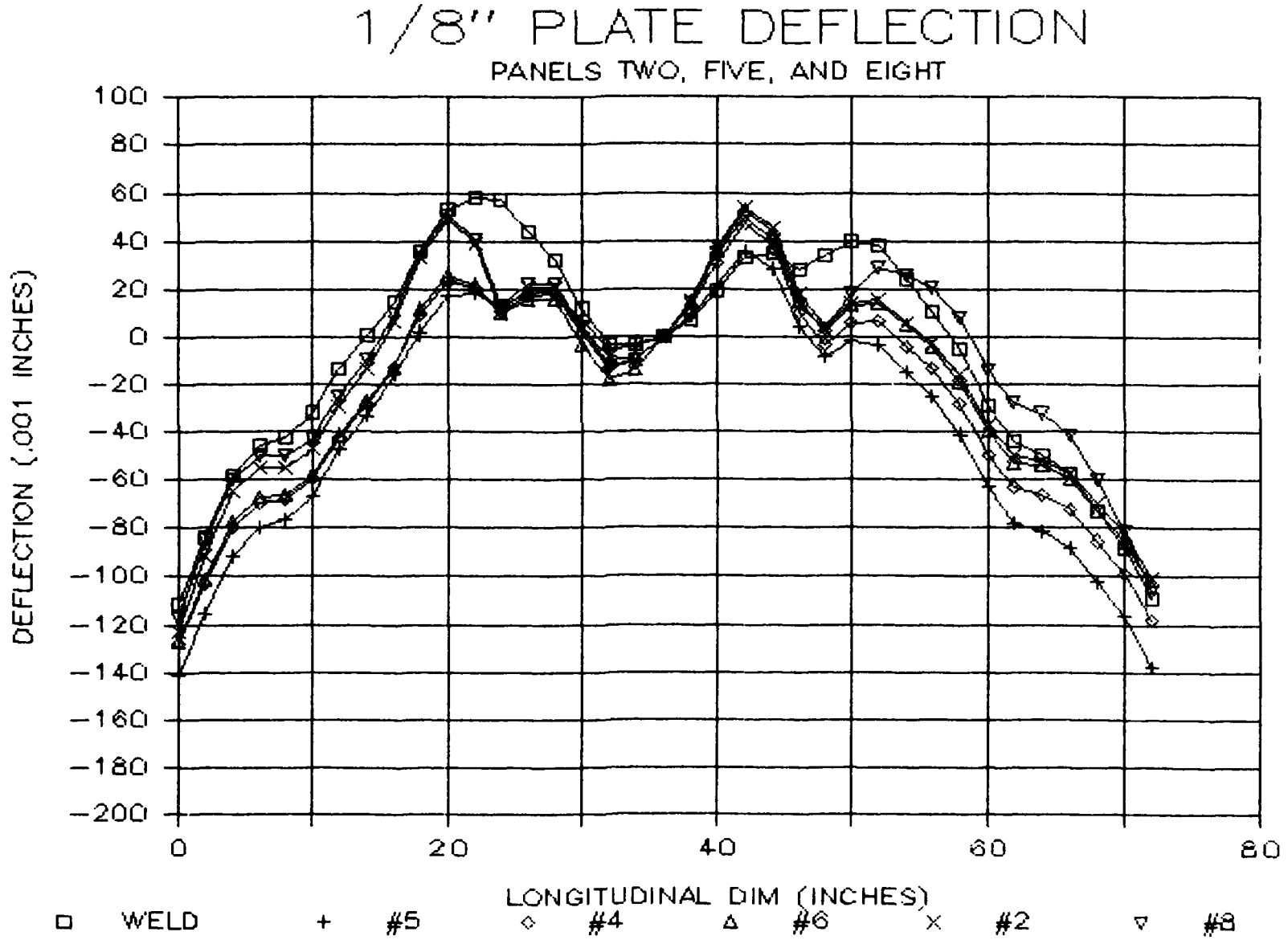

1/8" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#3
#1
#7
#9

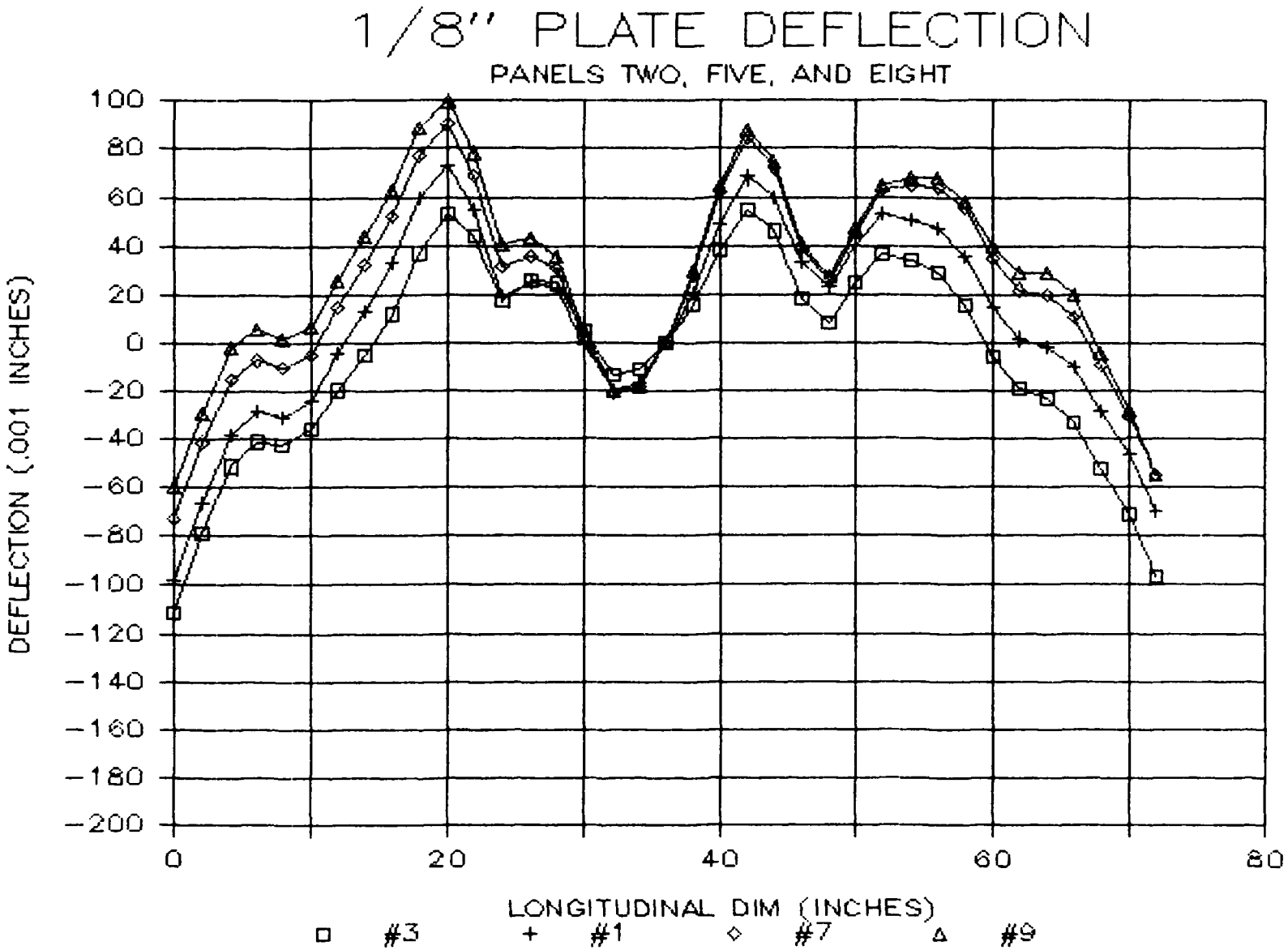

1/8" PLATE DEFLECTION
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
150
100
50
0
-50
-100
-150
-200
-250
-300
0
10
20
30
40
TRANSVERSE DIM (INCHES)
WELD
#5
#4
#6
#2
#8

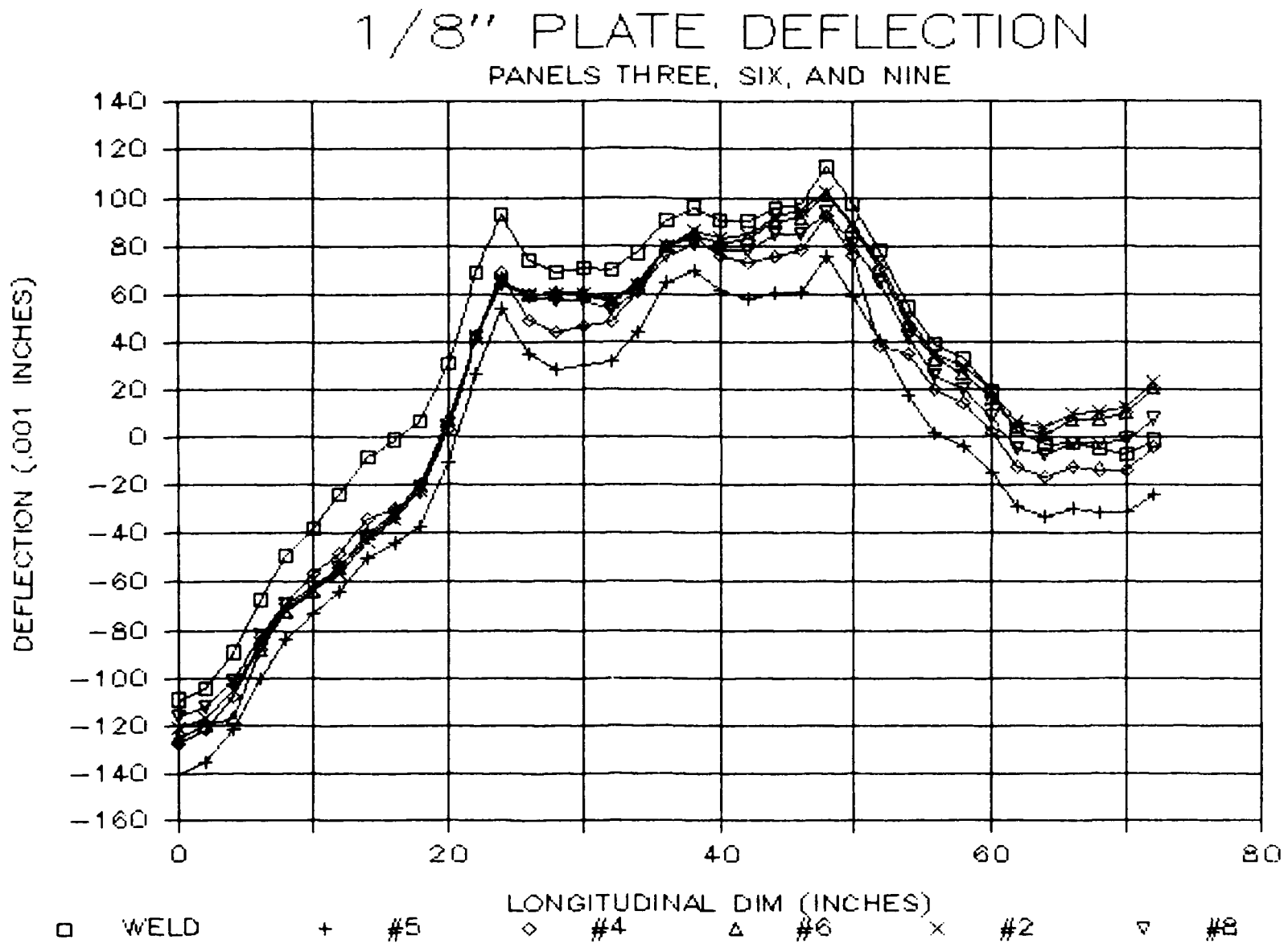

1/8" PLATE DEFLECTION
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
150
100
50
0
-50
-100
-150
-200
-250
-300
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#3
#1
#7
#9

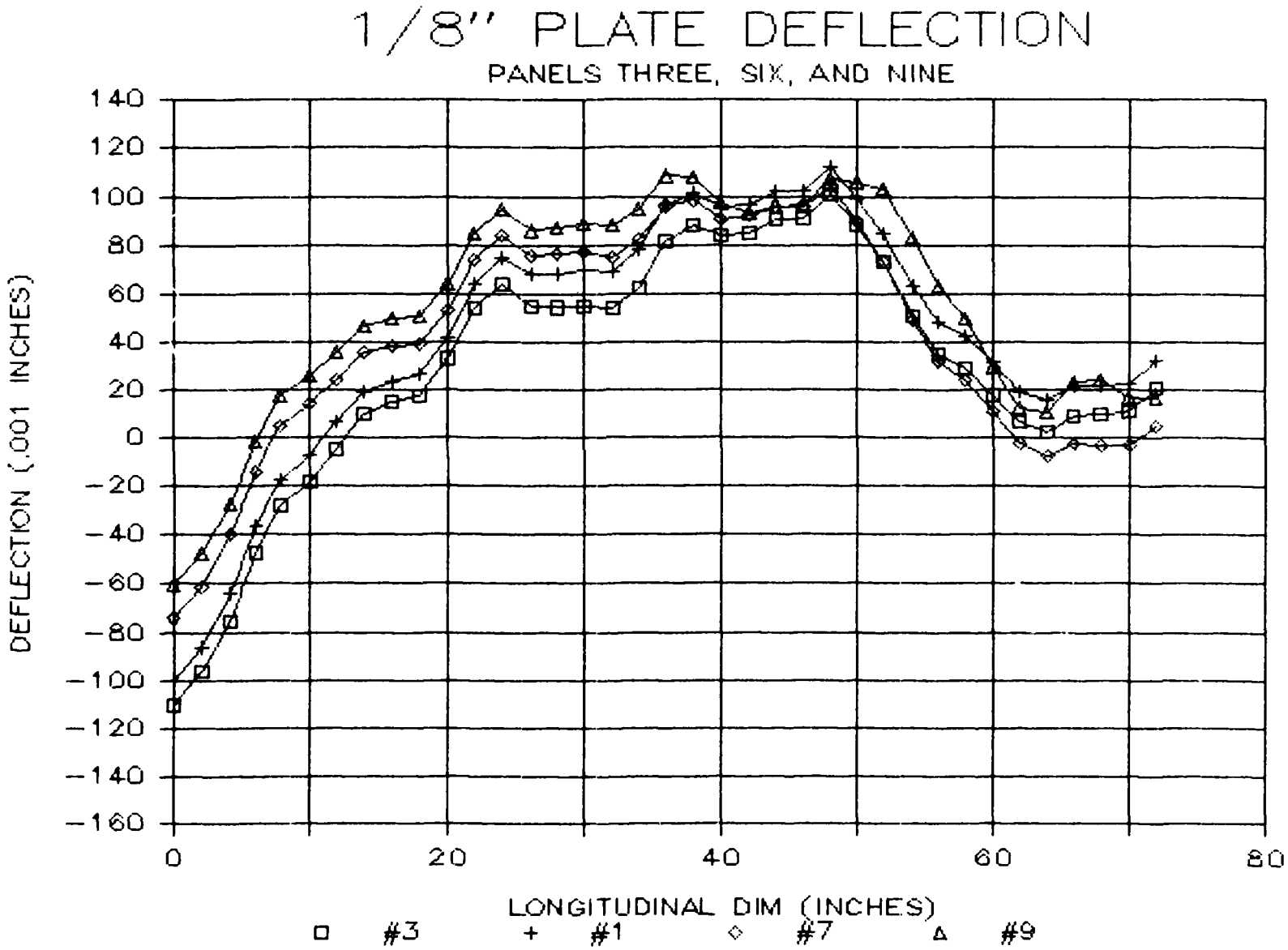

1/8" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
WELD
#5
#4
#6
#2
#8


1/8" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
□ #3
+ #1
◇ #7
△ #9


1/8" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
WELD
#5
#4
#6
#2
#8


1/8" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#3
#1
#7
#9

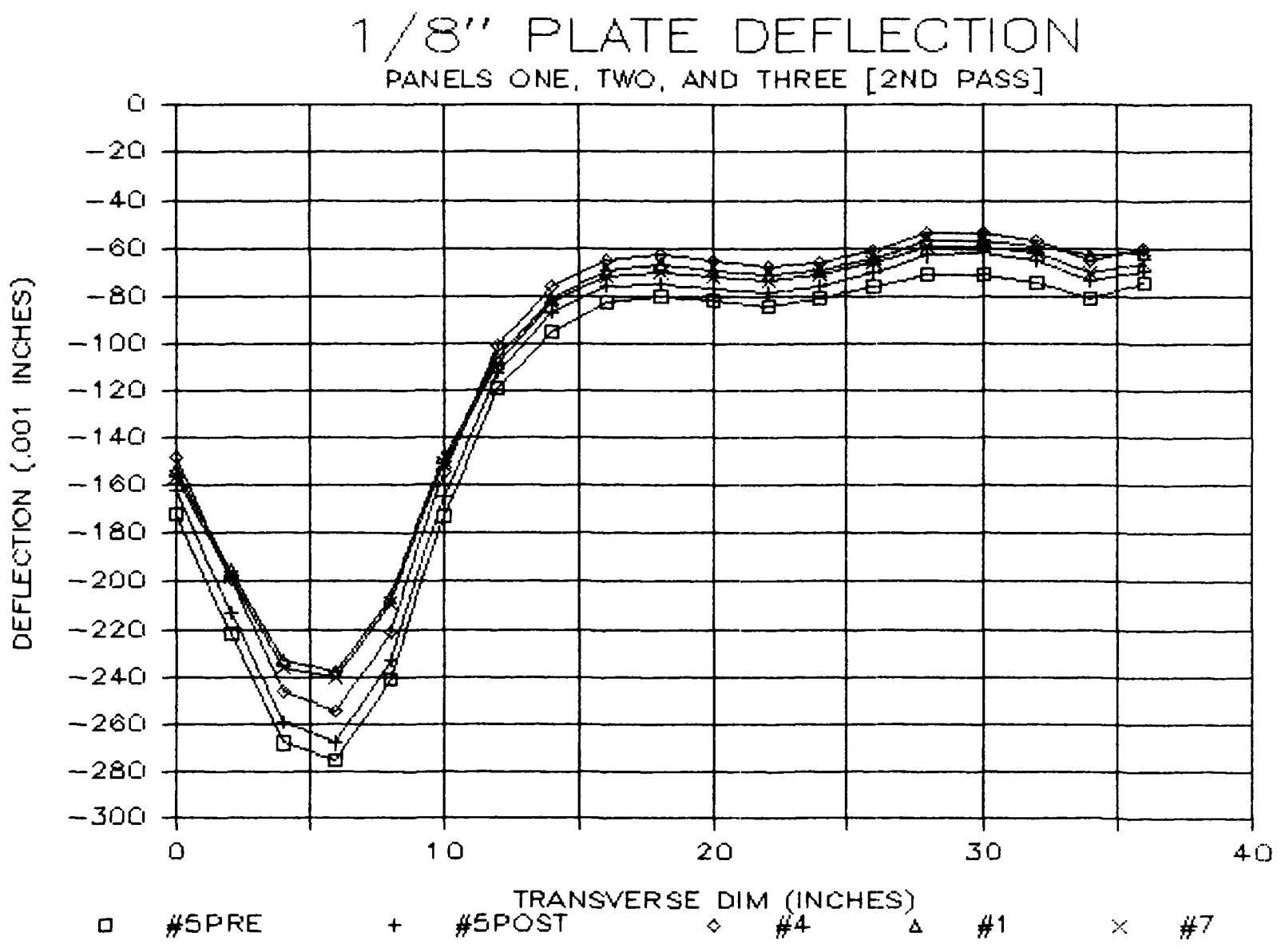

1/8" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
WELD
#5
#4
#6
#2
#8

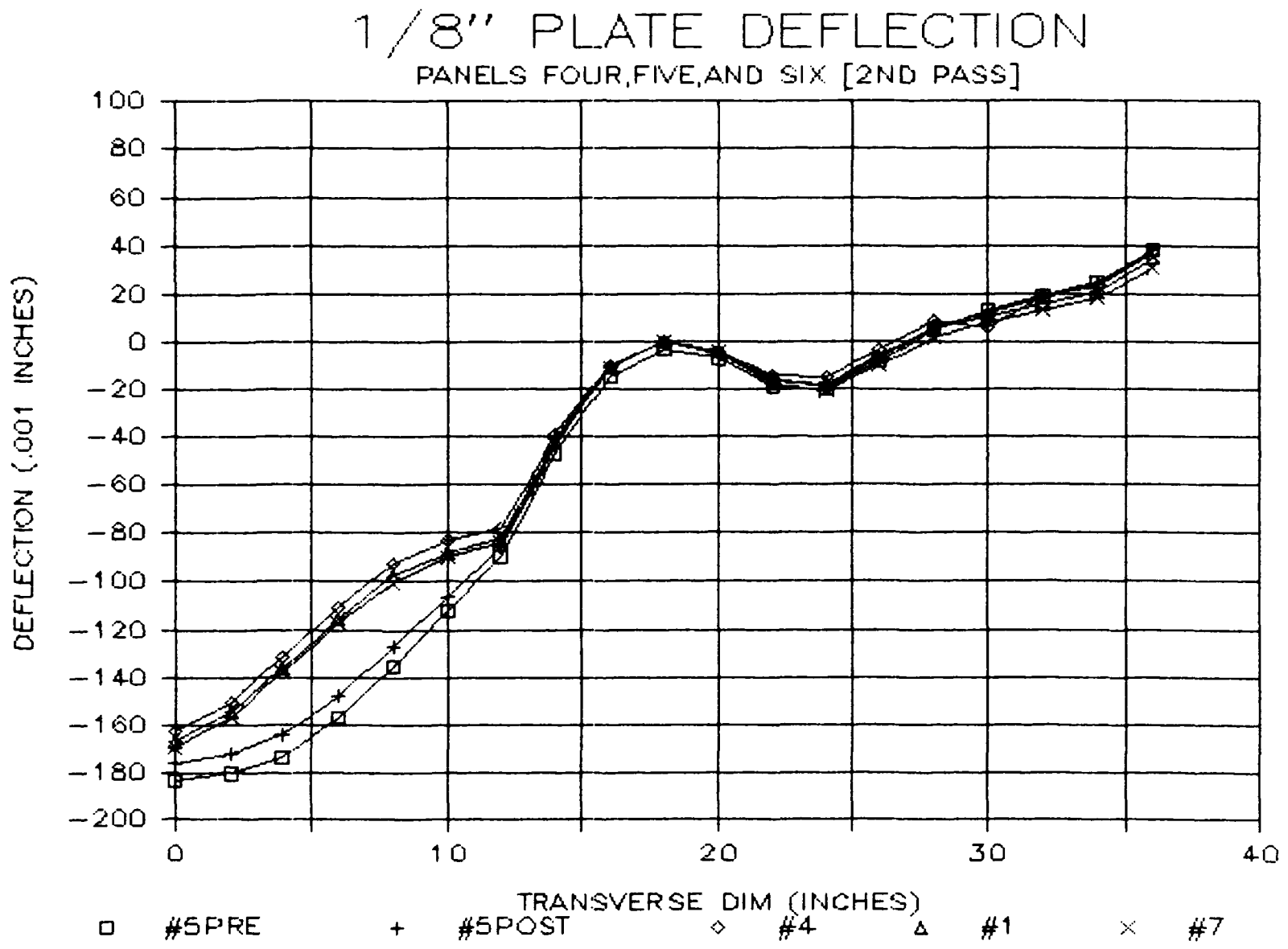

1/8" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#3
#1
#7
#9

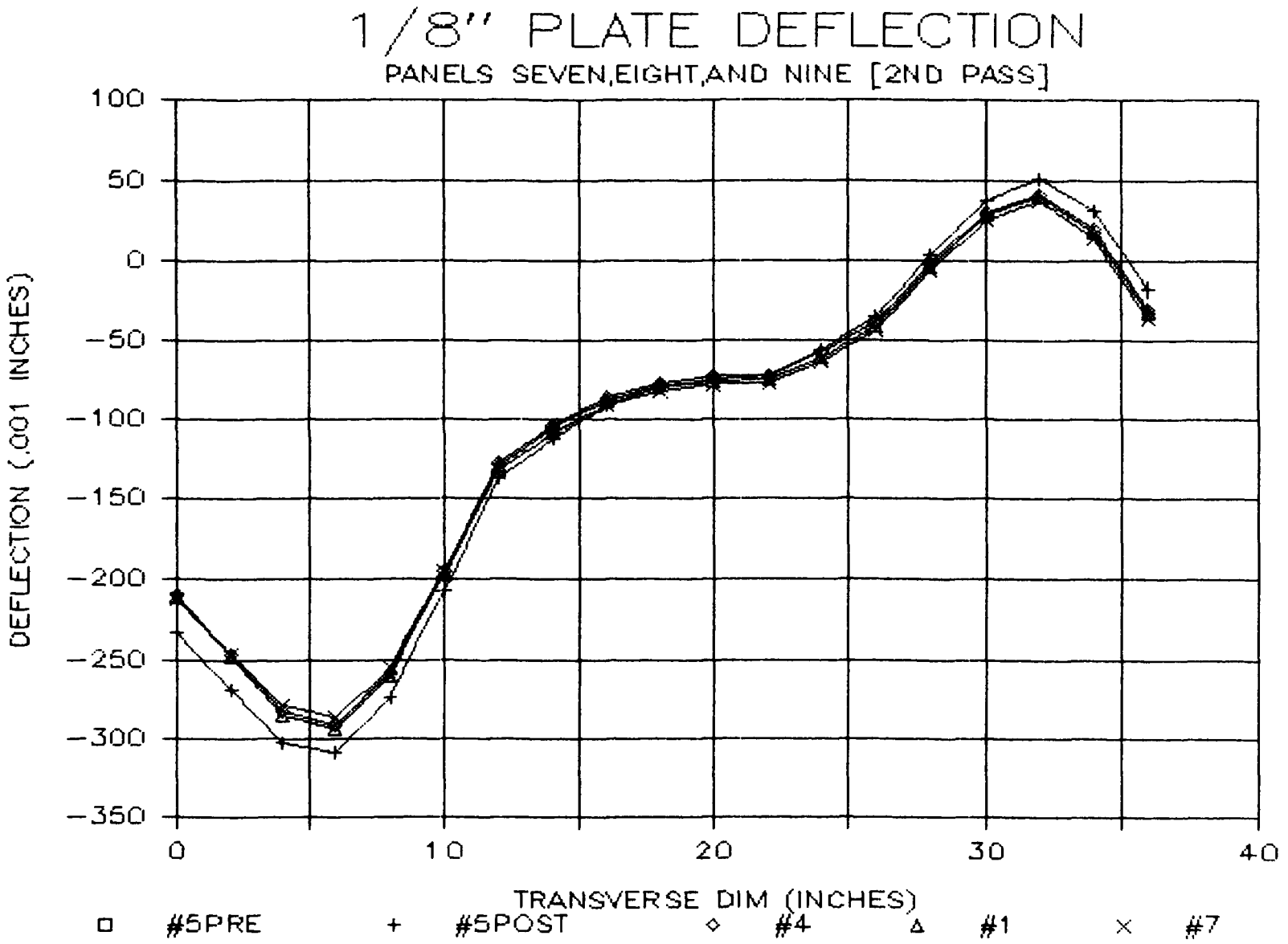
APPENDIX K

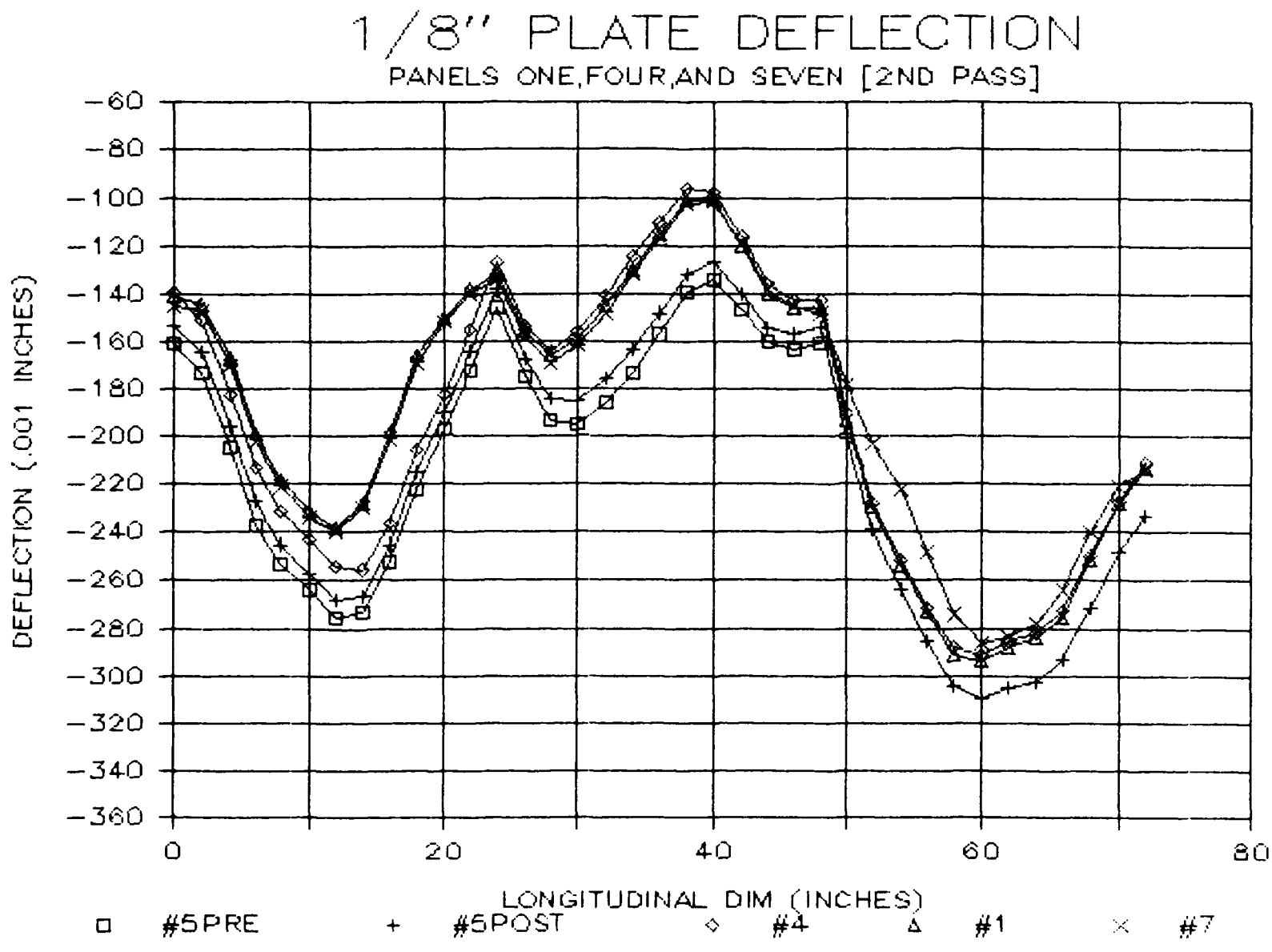
GRAPHS OF THE 1/8" STIFFENED PLATE MID-PANEL DEFLECTIONS AFTER THE SECOND LINE HEATING PASS

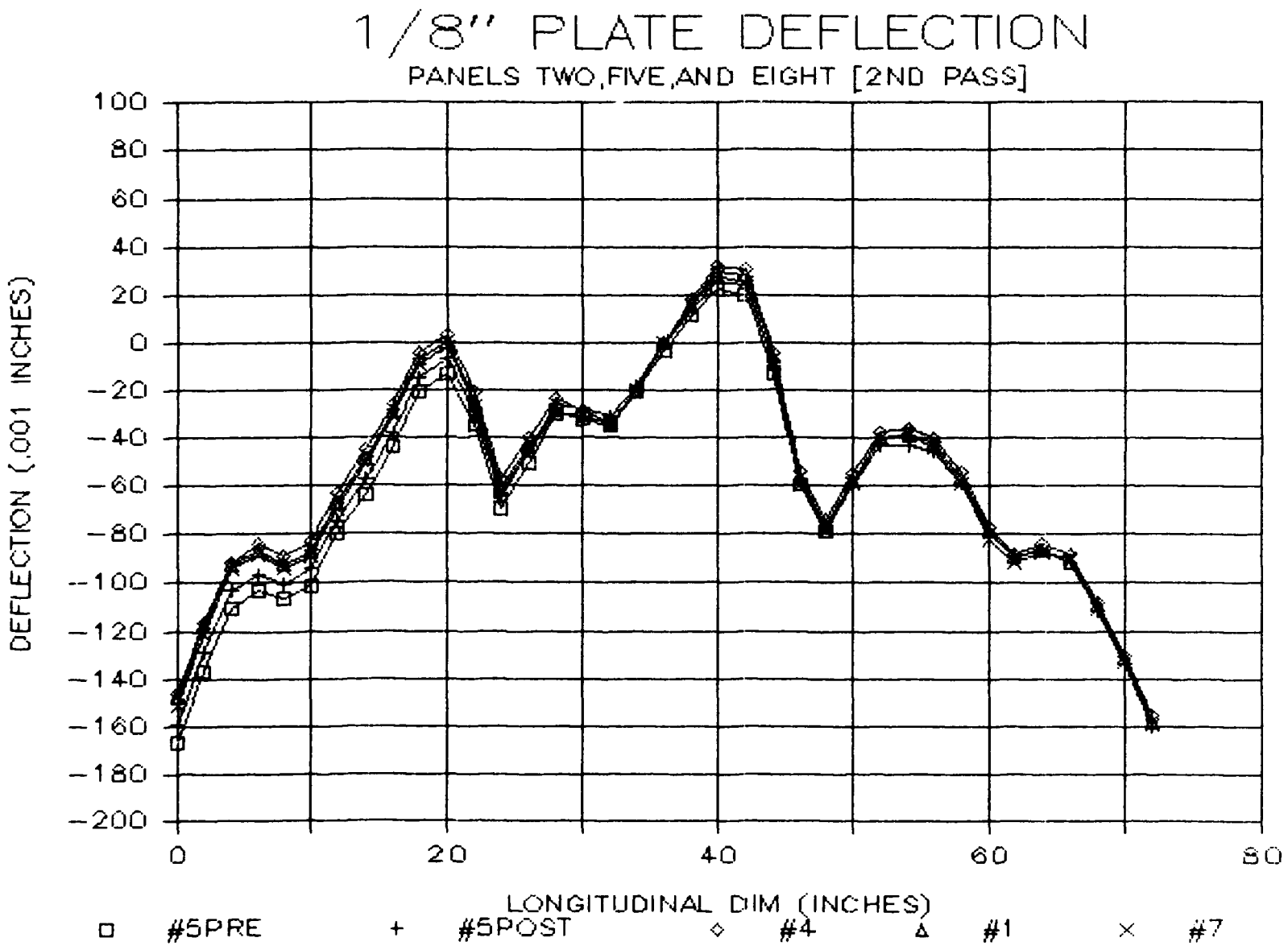
The horizontal coordinate is transverse or longitudinal displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

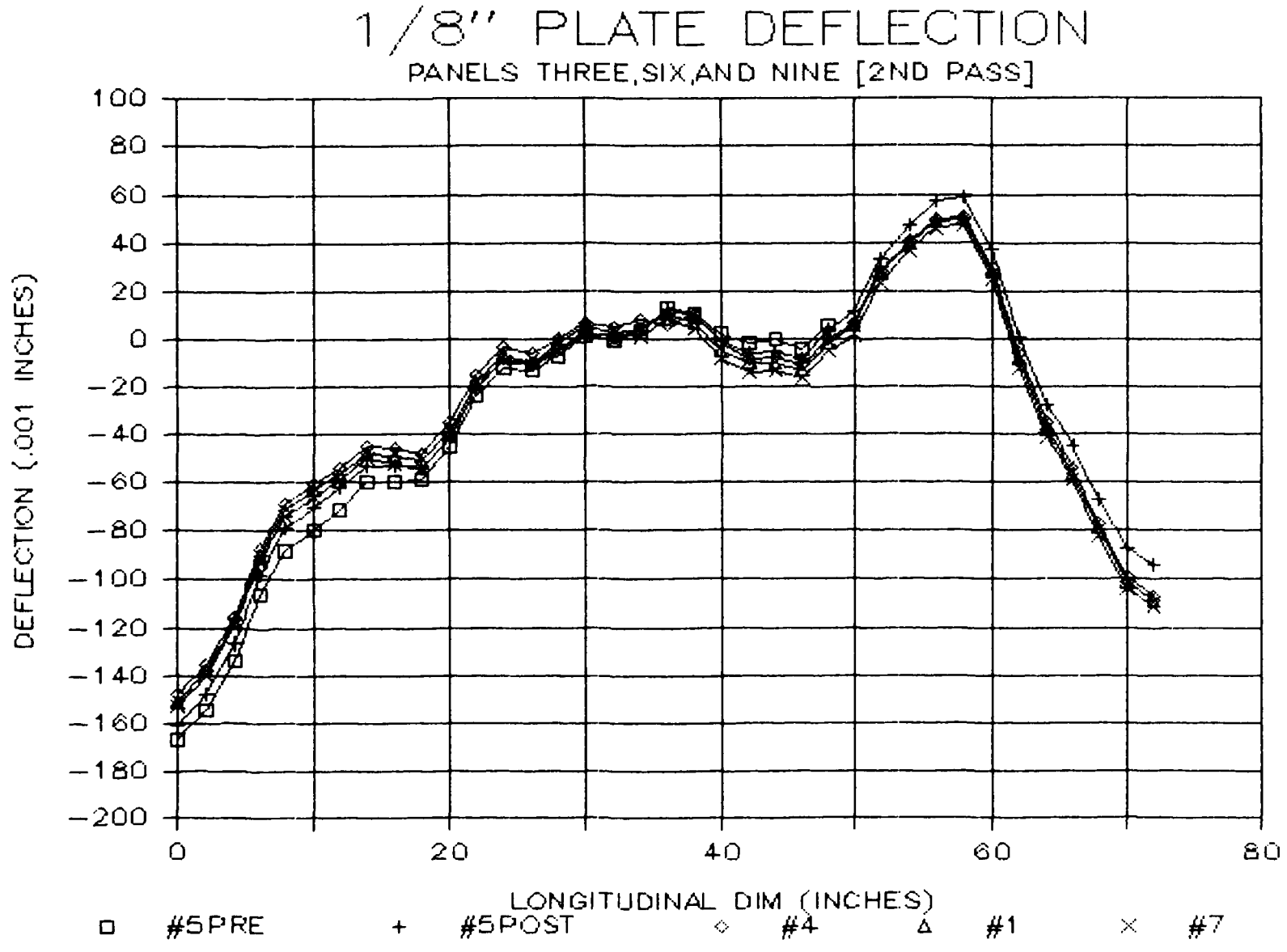

1/8" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE [2ND PASS]
DEFLECTION (.001 INCHES)
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#5PRE
#5POST
#4
#1
#7


1/8" PLATE DEFLECTION
PANELS FOUR,FIVE,AND SIX [2ND PASS]
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#5PRE
#5POST
#4
#1
#7


1/8" PLATE DEFLECTION
PANELS SEVEN,EIGHT,AND NINE [2ND PASS]
DEFLECTION (.001 INCHES)
100
50
0
-50
-100
-150
-200
-250
-300
-350
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#5PRE
#5POST
#4
#1
#7


1/8" PLATE DEFLECTION
PANELS ONE,FOUR,AND SEVEN [2ND PASS]
DEFLECTION (.001 INCHES)
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300
-320
-340
-360
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#5PRE
#5POST
#4
#1
#7

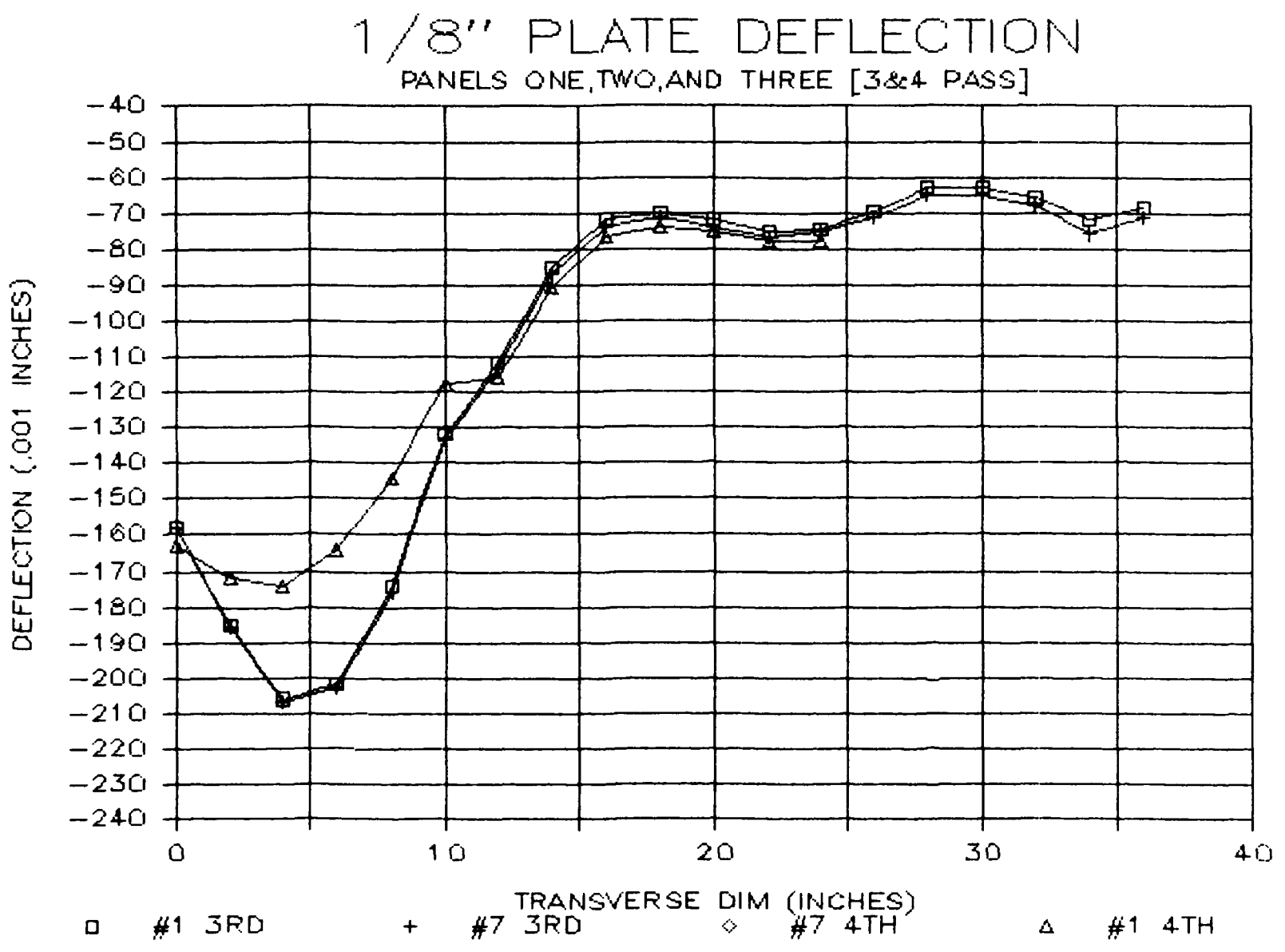

1/8" PLATE DEFLECTION
PANELS TWO,FIVE,AND EIGHT [2ND PASS]
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#5PRE
#5POST
#4
#1
#7

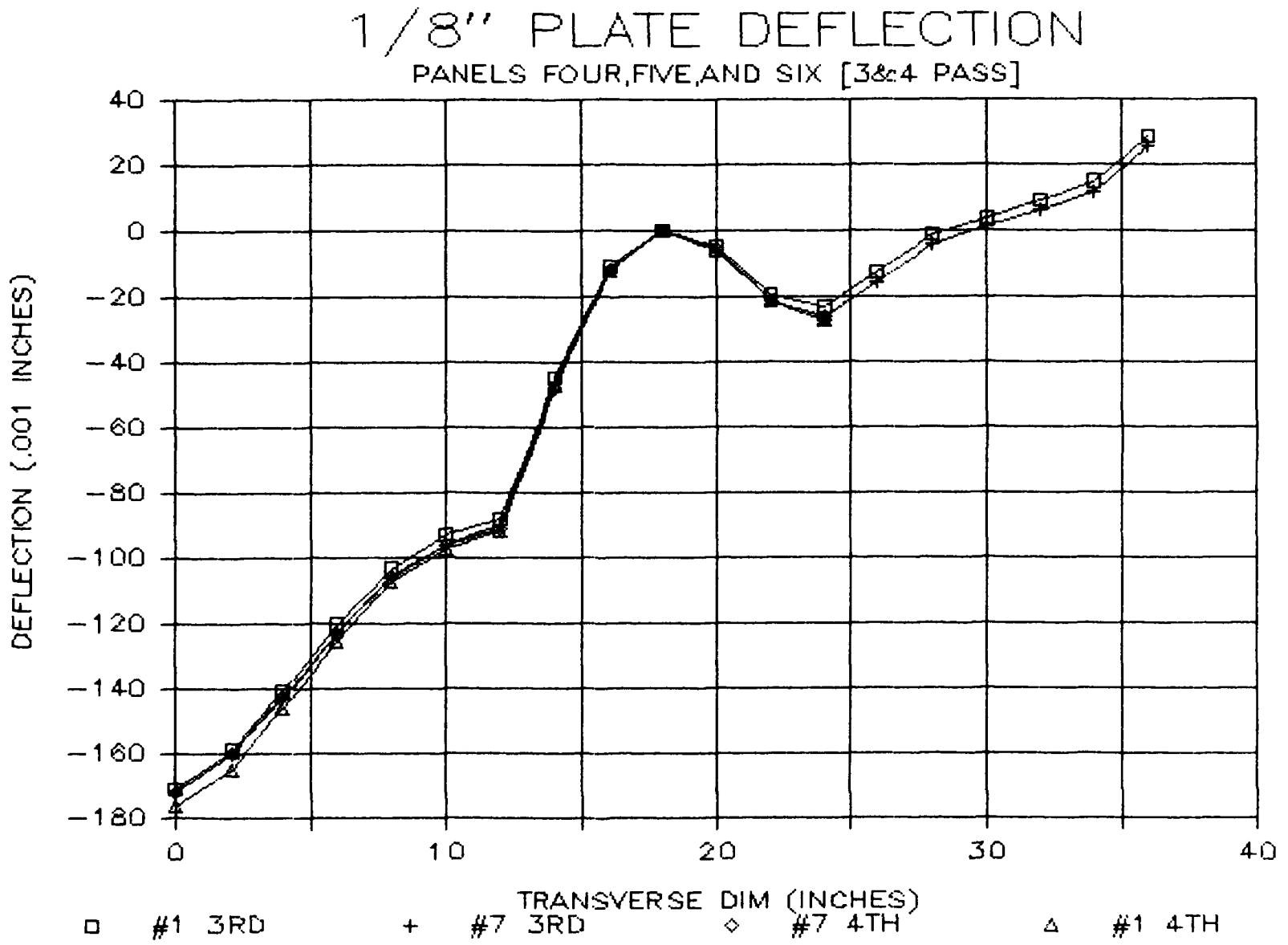

1/8" PLATE DEFLECTION
PANELS THREE,SIX,AND NINE [2ND PASS]
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#5PRE
#5POST
#4
#1
#7

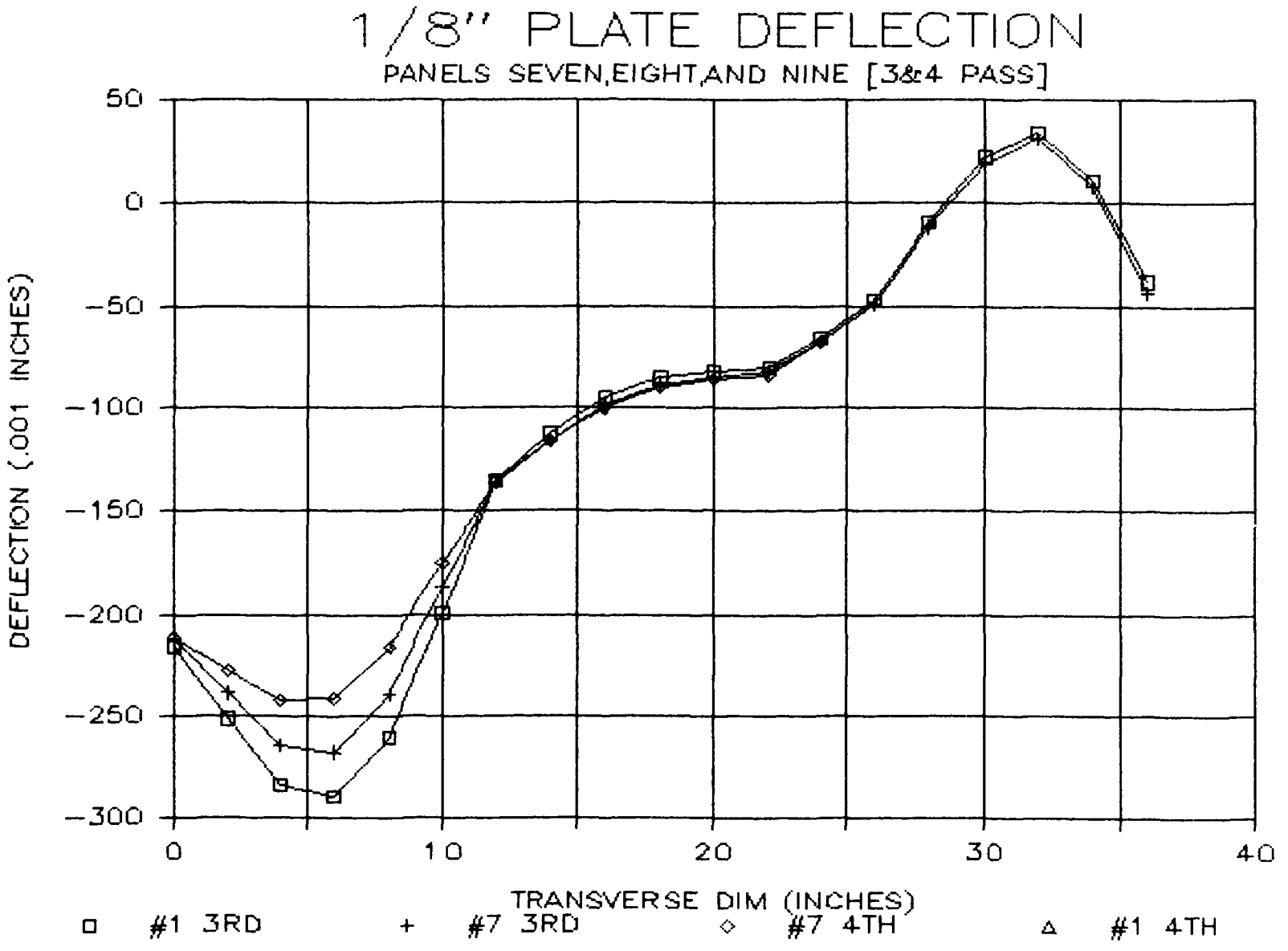
APPENDIX L

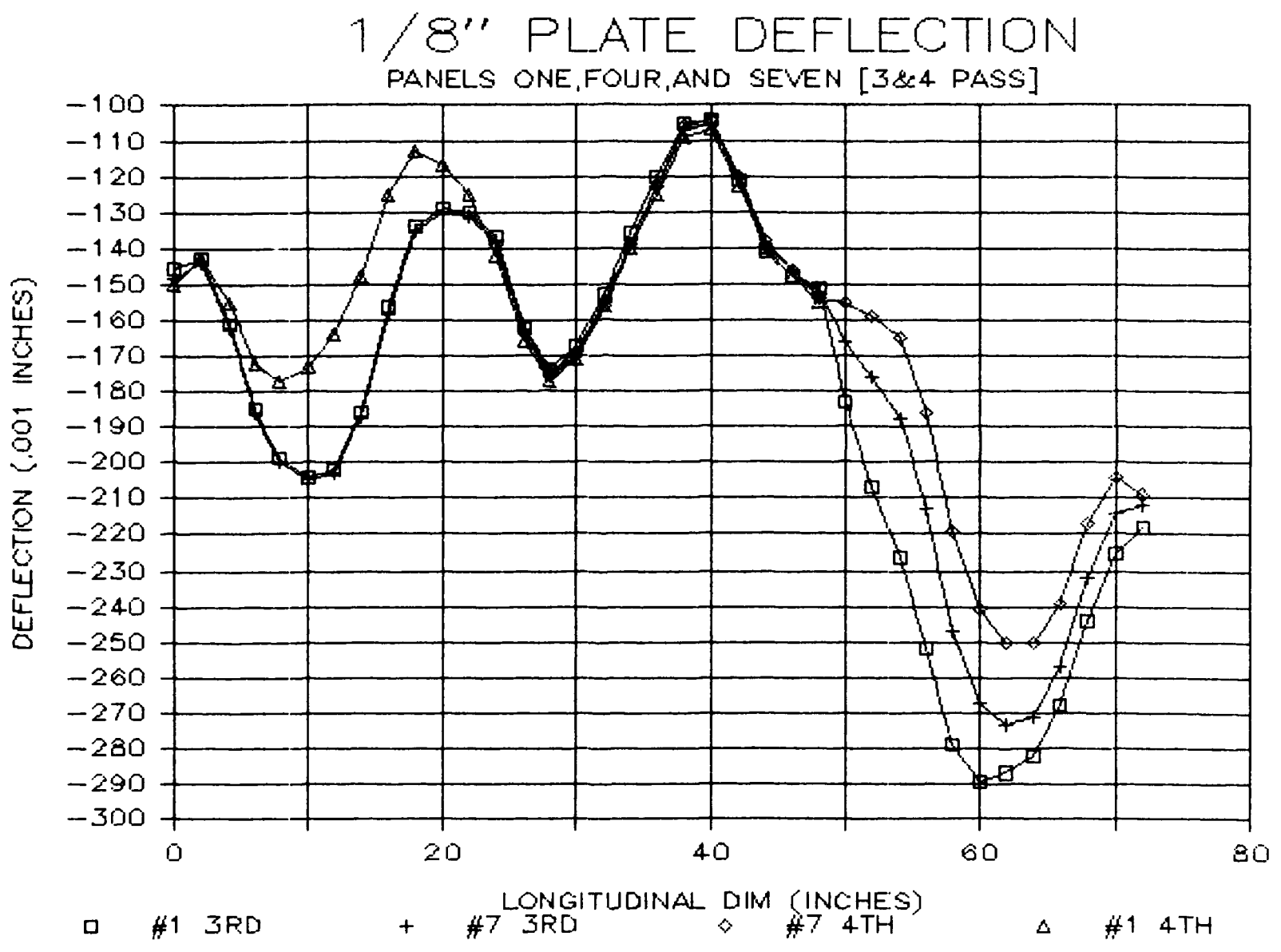
GRAPHS OF THE 1/8" STIFFENED PLATE MID-PANEL DEFLECTIONS AFTER THE THIRD AND FOURTH LINE HEATING PASS

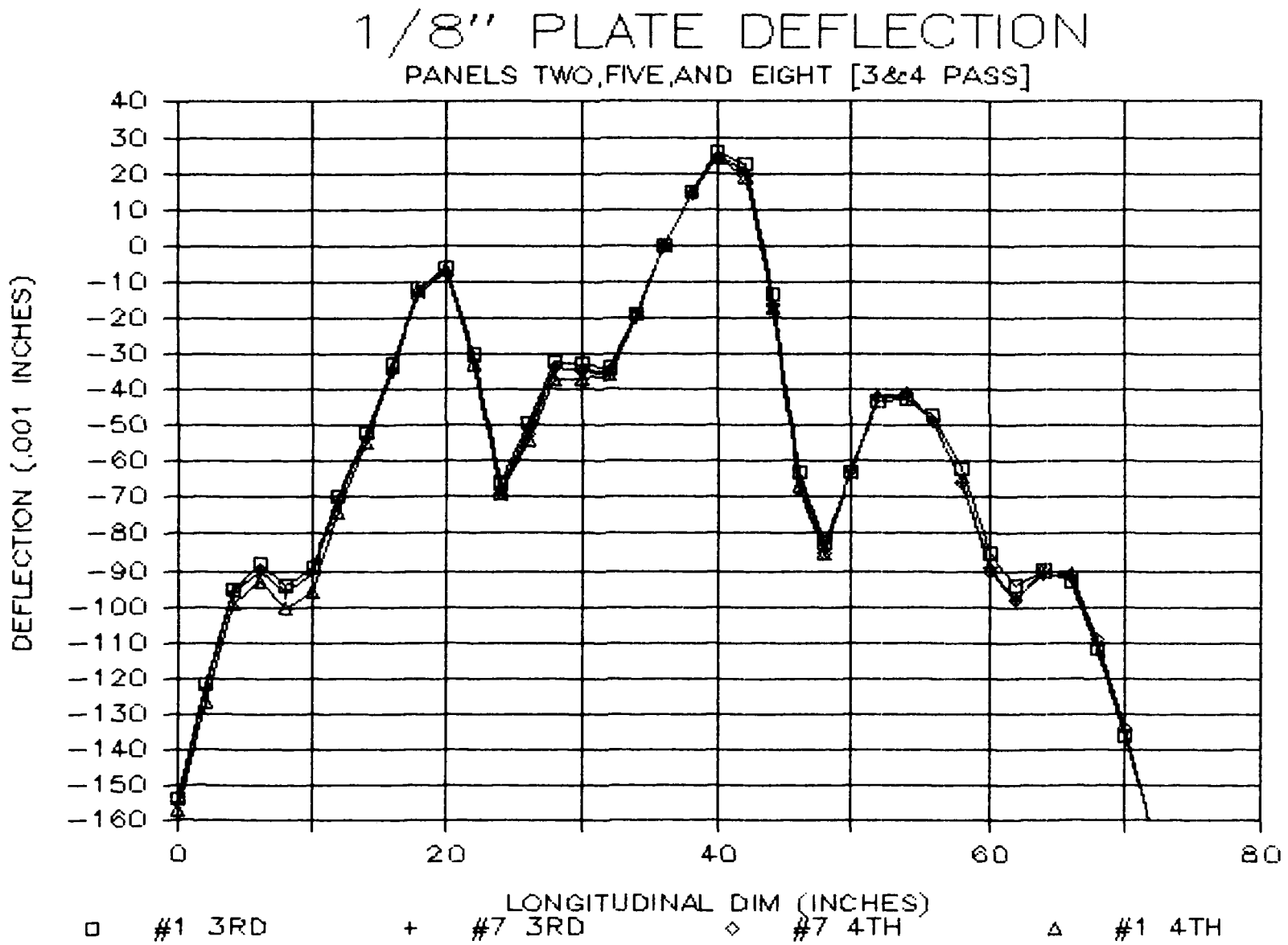
The horizontal coordinate is transverse or longitudinal displacement. measured in inches. and the vertical coordinate is out-of-plane deflection. measured in thousandths of an inch.

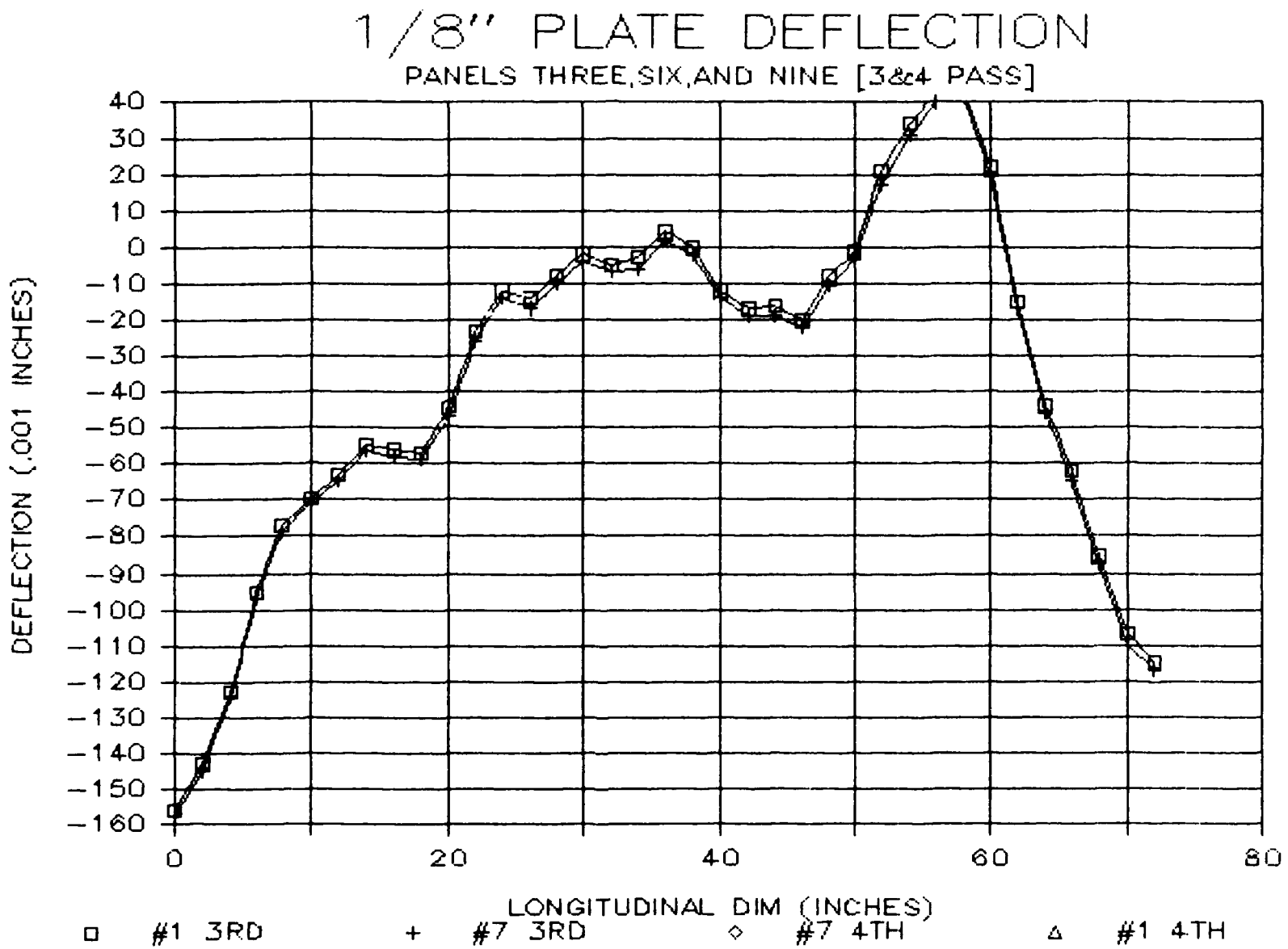

1/8" PLATE DEFLECTION
PANELS ONE,TWO,AND THREE [3&4 PASS]
DEFLECTION (.001 INCHES)
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
-220
-230
-240
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#1 3RD
#7 3RD
#7 4TH
#1 4TH


1/8" PLATE DEFLECTION
PANELS FOUR,FIVE,AND SIX [3&4 PASS]
DEFLECTION (.001 INCHES)
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
0
10
20
30
40
TRANSVERSE DIM (INCHES)
□ #1 3RD
+ #7 3RD
◇ #7 4TH
△ #1 4TH


1/8" PLATE DEFLECTION
PANELS SEVEN,EIGHT,AND NINE [3&4 PASS]
DEFLECTION (.001 INCHES)
50
0
-50
-100
-150
-200
-250
-300
0
10
20
30
40
TRANSVERSE DIM (INCHES)
#1 3RD
#7 3RD
#7 4TH
#1 4TH


1/8" PLATE DEFLECTION
PANELS ONE,FOUR,AND SEVEN [3&4 PASS]
DEFLECTION (.001 INCHES)
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
-220
-230
-240
-250
-260
-270
-280
-290
-300
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#1 3RD
#7 3RD
#7 4TH
#1 4TH

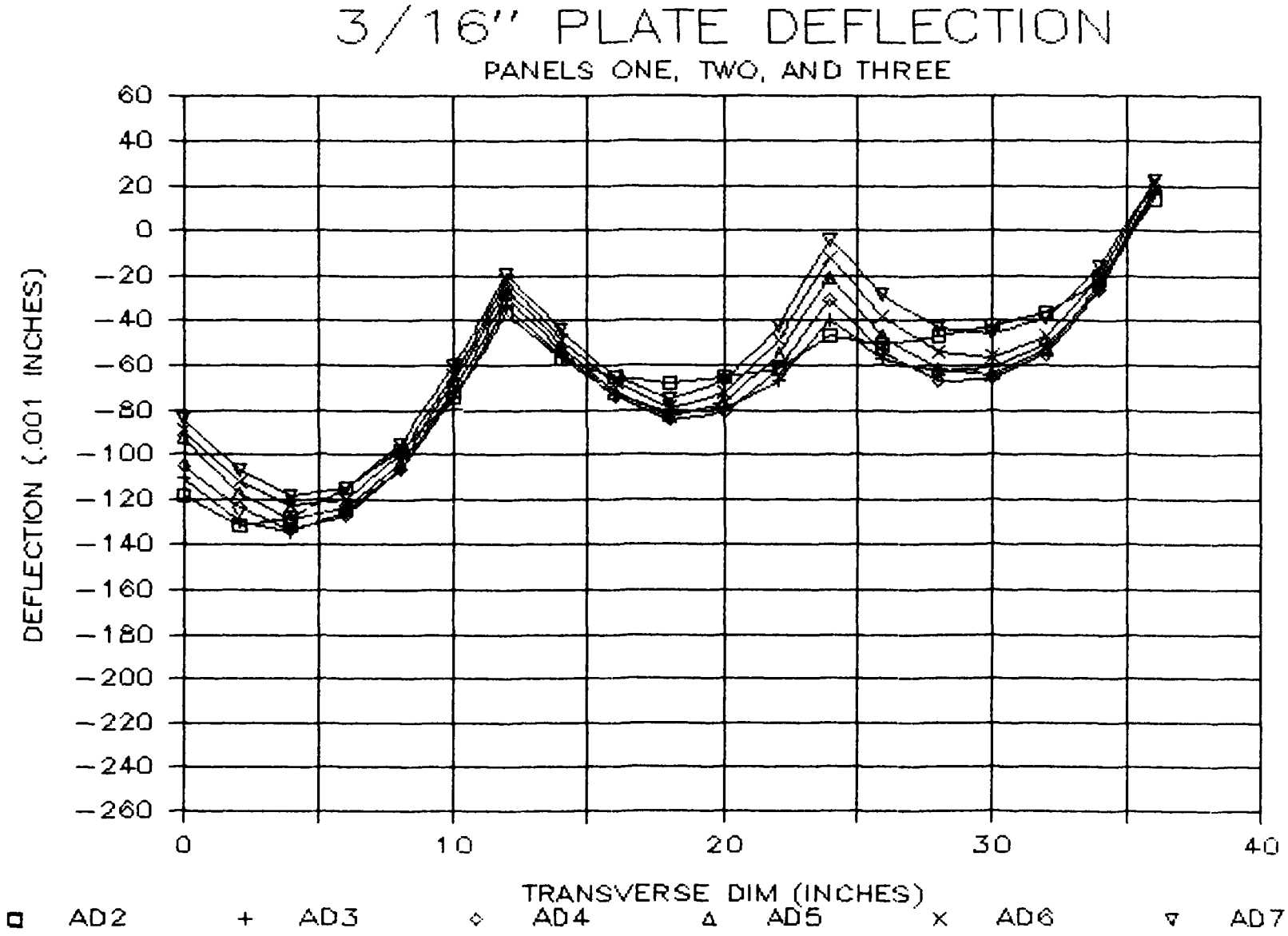

1/8" PLATE DEFLECTION
PANELS TWO,FIVE,AND EIGHT [3&4 PASS]
DEFLECTION (.001 INCHES)
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#1 3RD
#7 3RD
#7 4TH
#1 4TH

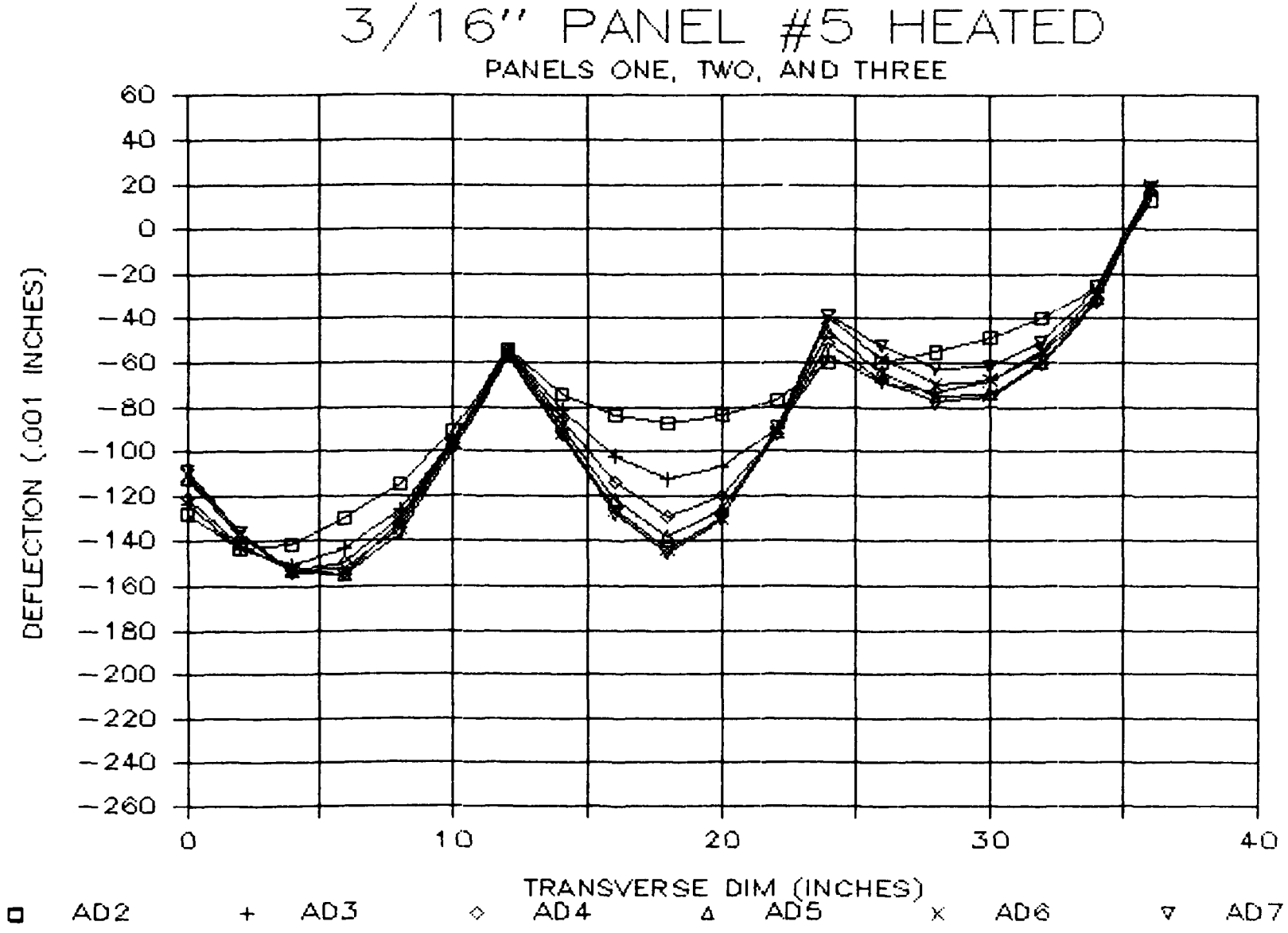

1/8" PLATE DEFLECTION
PANELS THREE,SIX,AND NINE [3&4 PASS]
DEFLECTION (.001 INCHES)
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
#1 3RD
#7 3RD
#7 4TH
#1 4TH

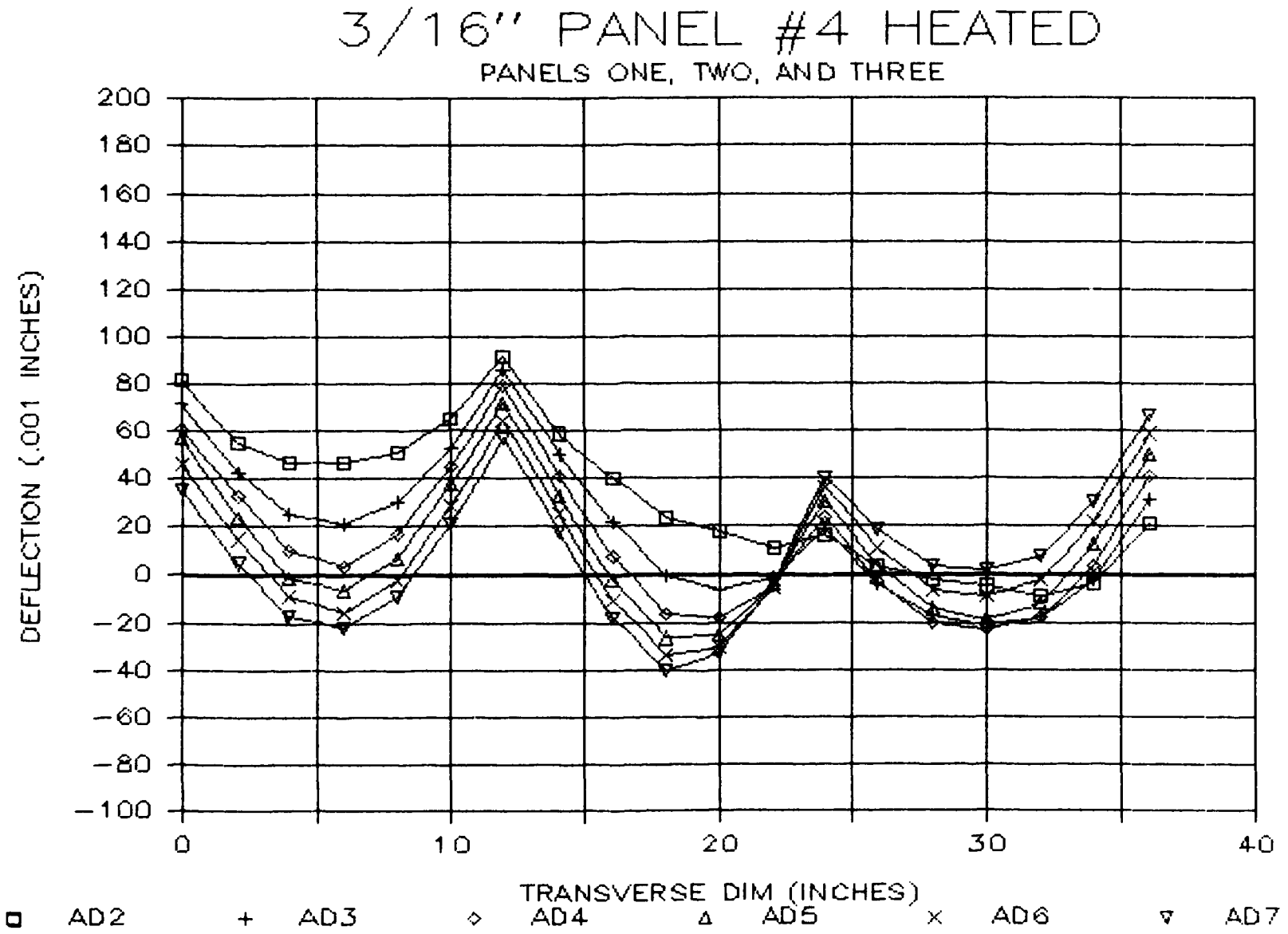
APPENDIX M

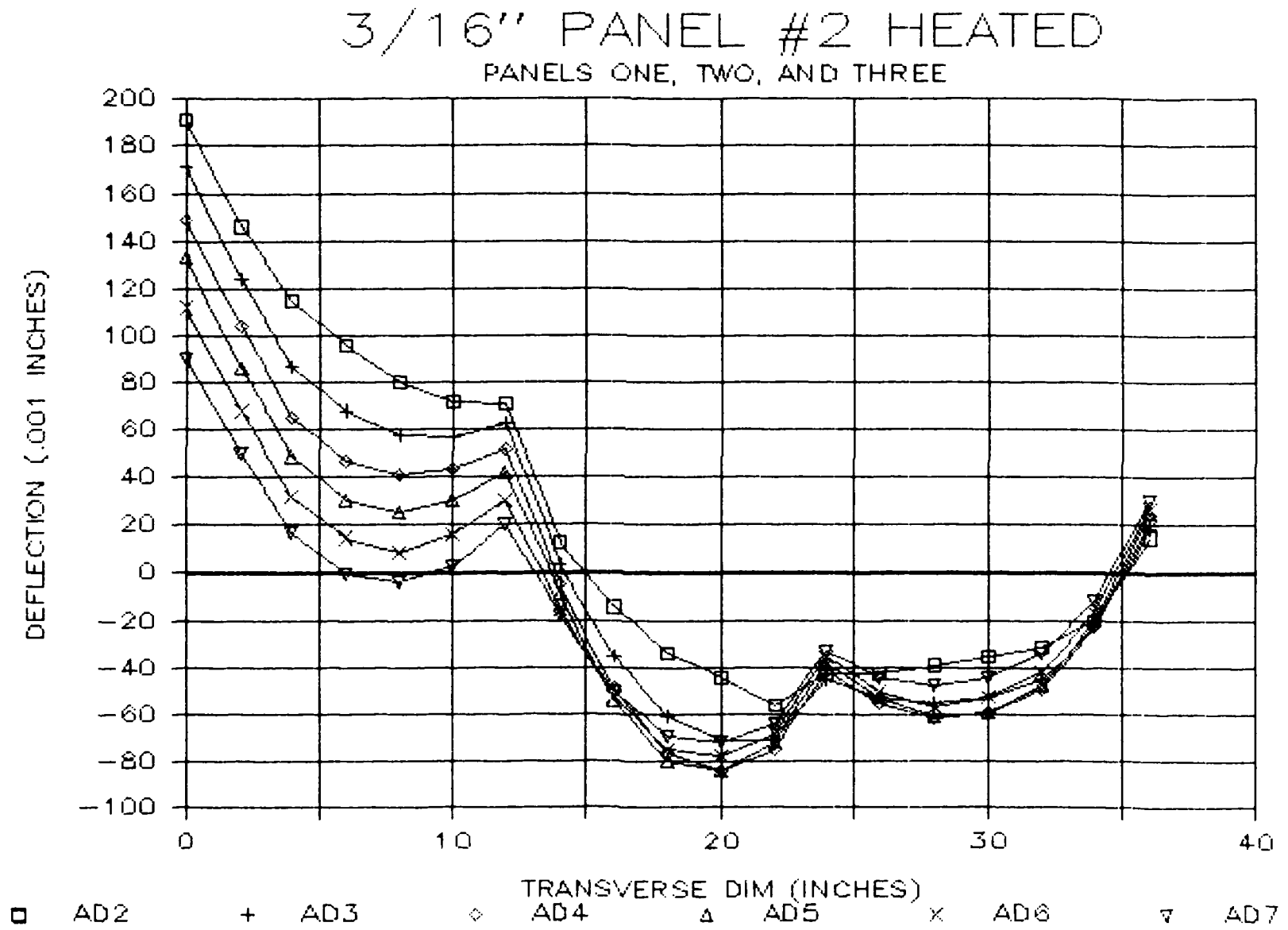
GRAPHS OF THE 3/16" STIFFENED PLATE TRANSVERSE OUT-OF-PLANE DEFLECTION READINGS FOR LINES AD2 THROUGH AD7

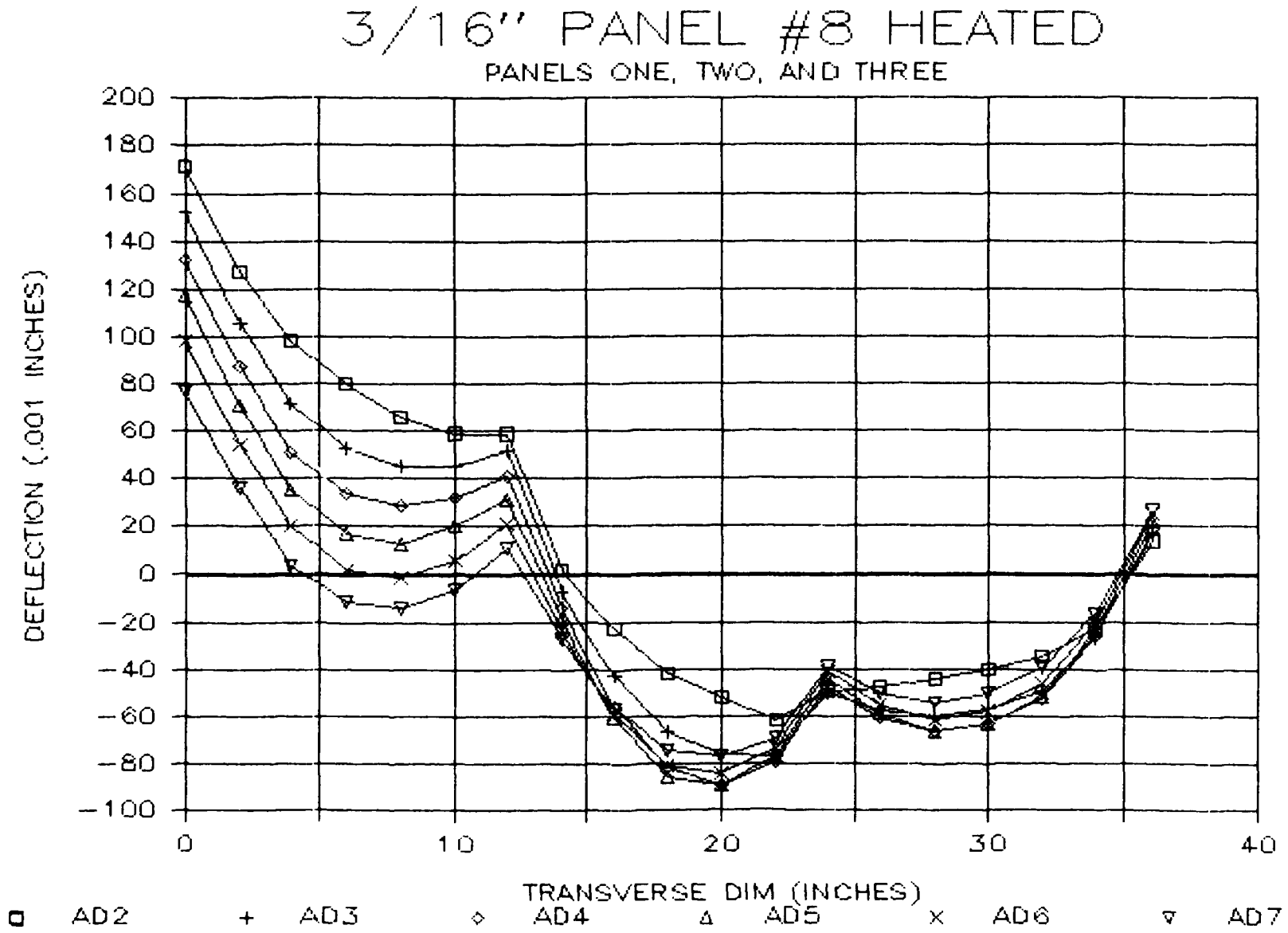
The horizontal coordinate is the transverse displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

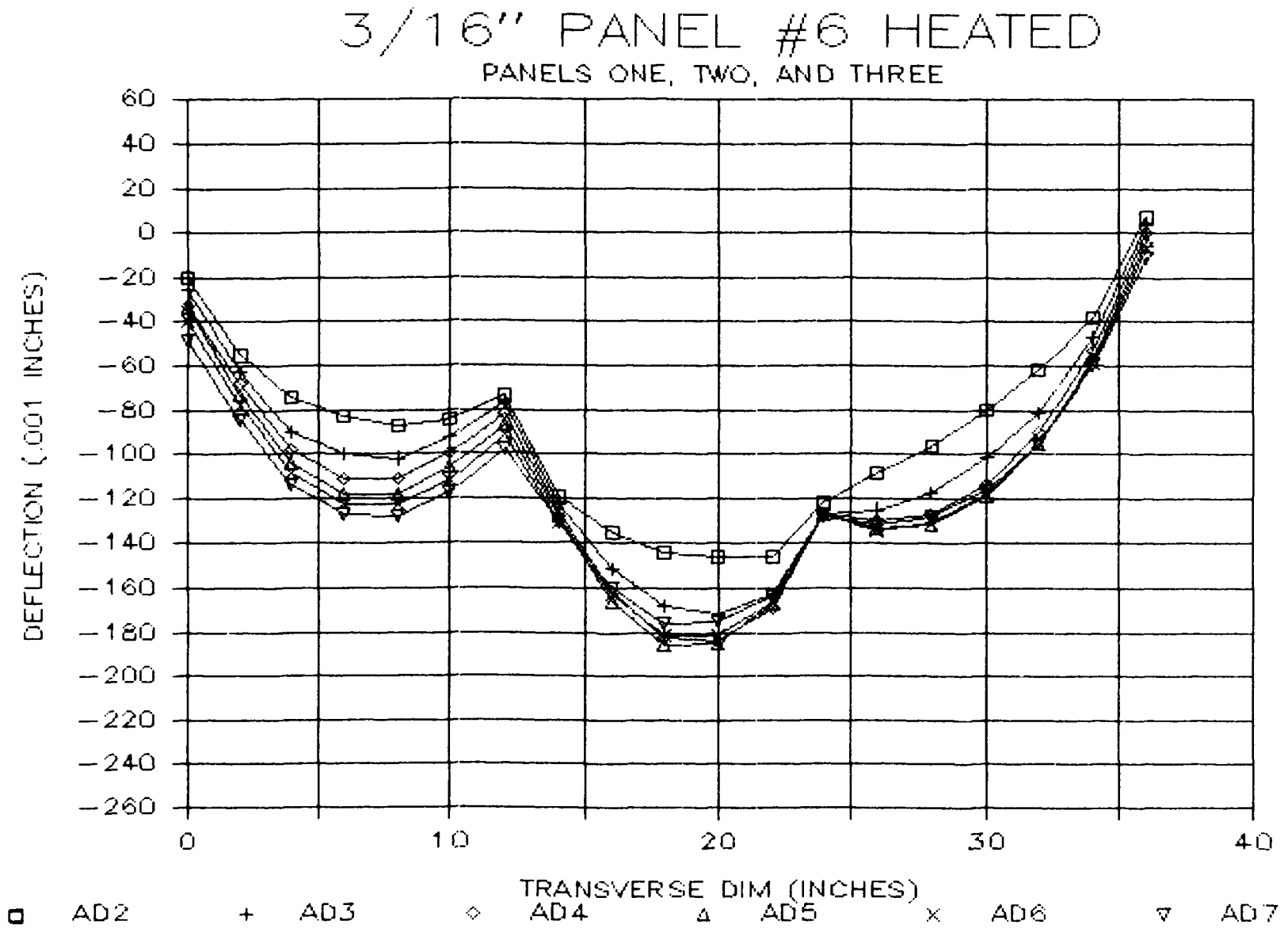

3/16" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD2
AD3
AD4
AD5
AD6
AD7


3/16" PANEL #5 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD2
AD3
AD4
AD5
AD6
AD7


3/16" PANEL #4 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD2
AD3
AD4
AD5
AD6
AD7


3/16" PANEL #2 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD2
AD3
AD4
AD5
AD6
AD7

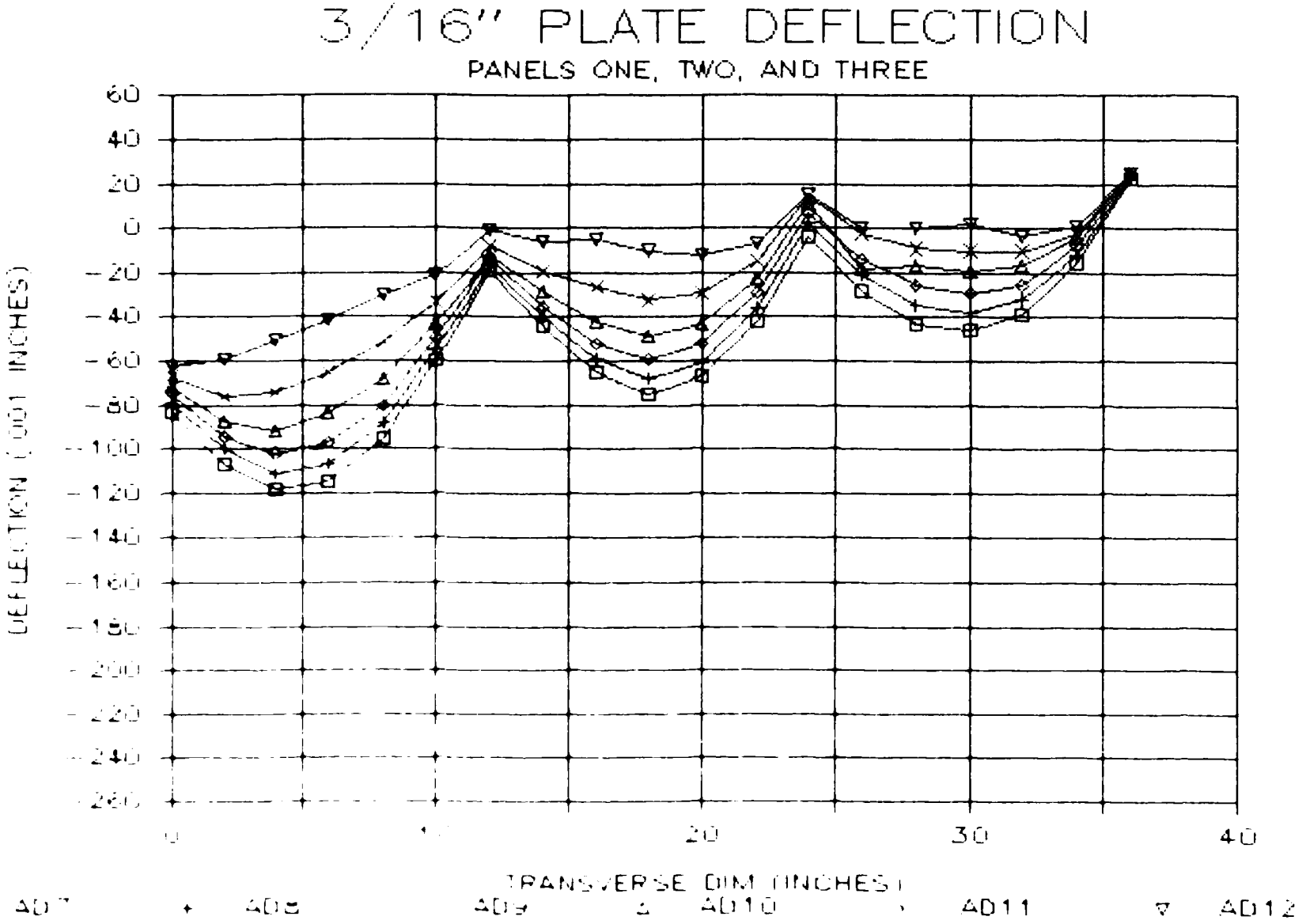

3/16" PANEL #8 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD2
AD3
AD4
AD5
AD6
AD7

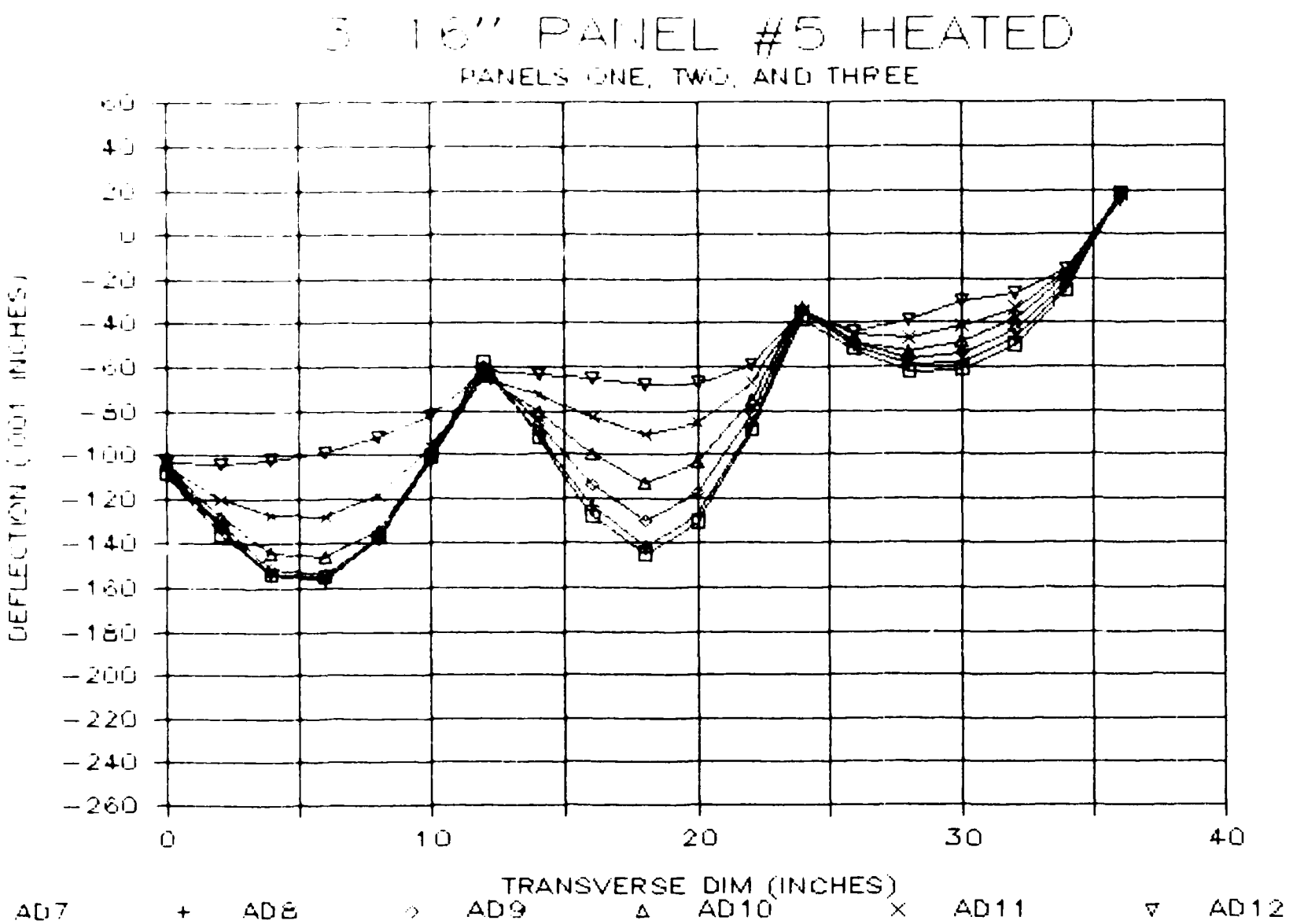

3/16" PANEL #6 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD2
AD3
AD4
AD5
AD6
AD7

APPENDIX N

GRAPHS OF THE 3/16" STIFFENED PLATE TRANSVERSE OUT-OF-PLANE DEFLECTION READINGS FOR LINES AD7 THROUGH AD12

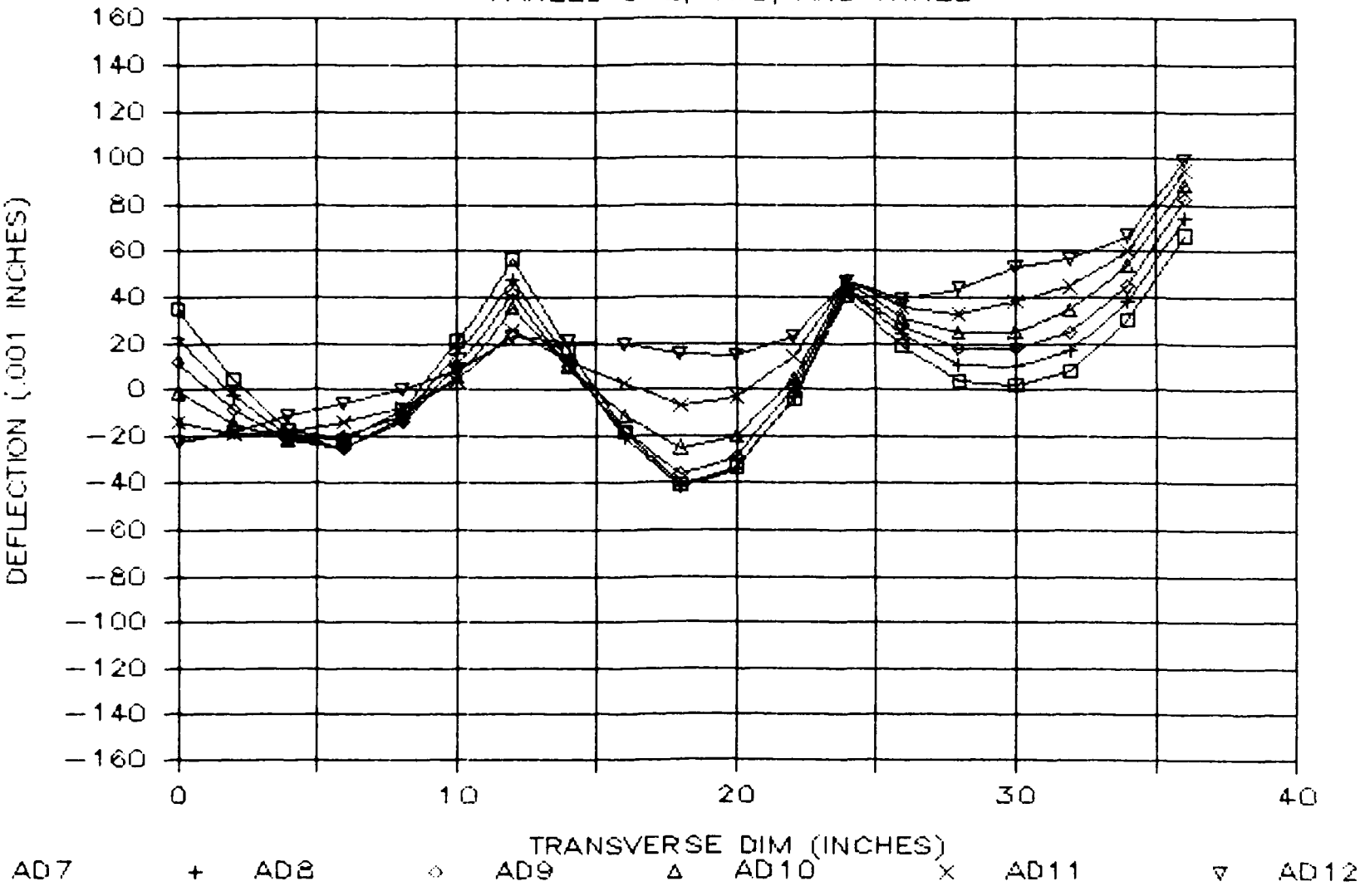
The horizontal coordinate is the transverse displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

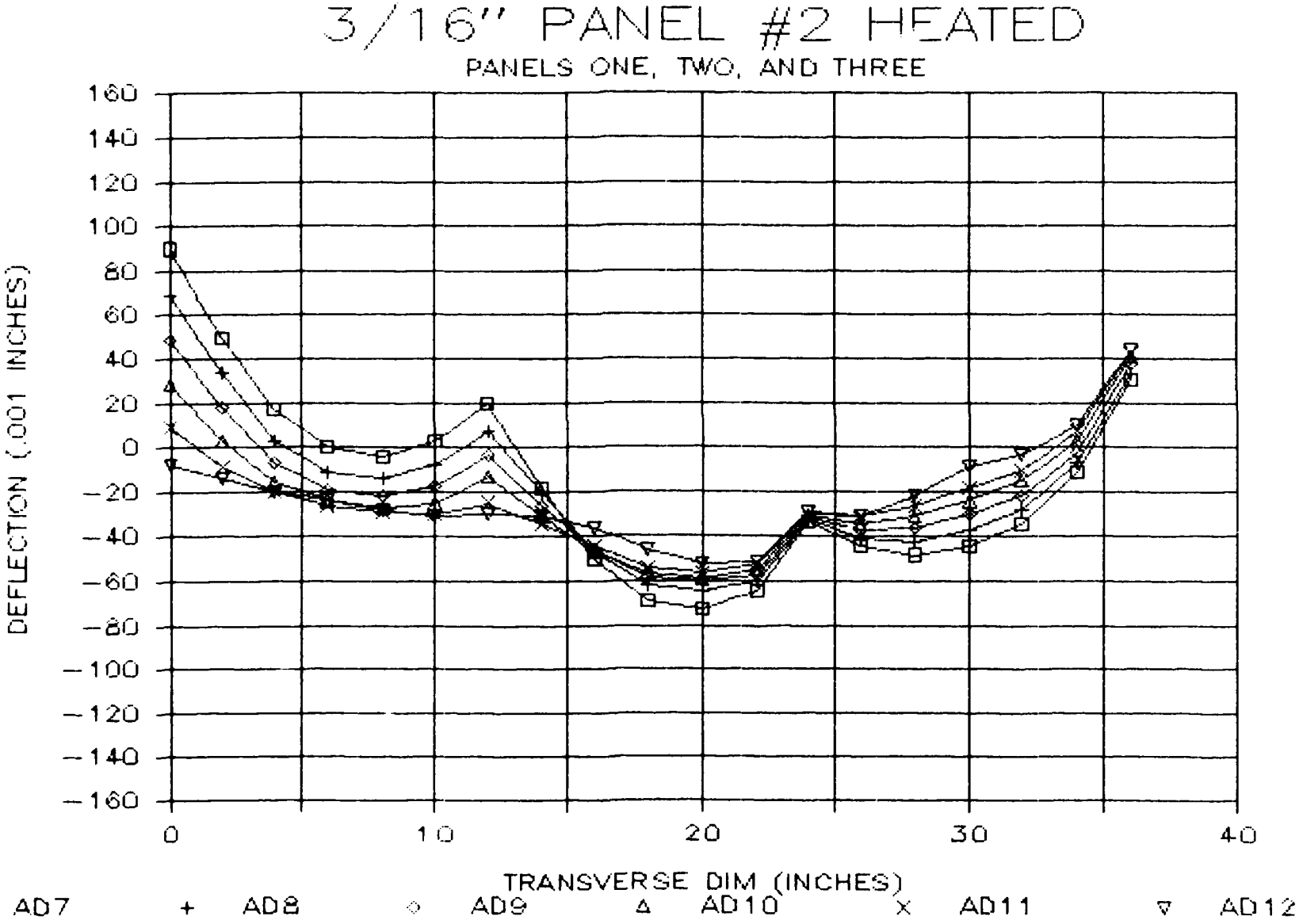

3/16" PLATE DEFLECTION
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
30
40
TRANSVERSE DIM (INCHES)
AD7
AD8
AD9
AD10
AD11
AD12

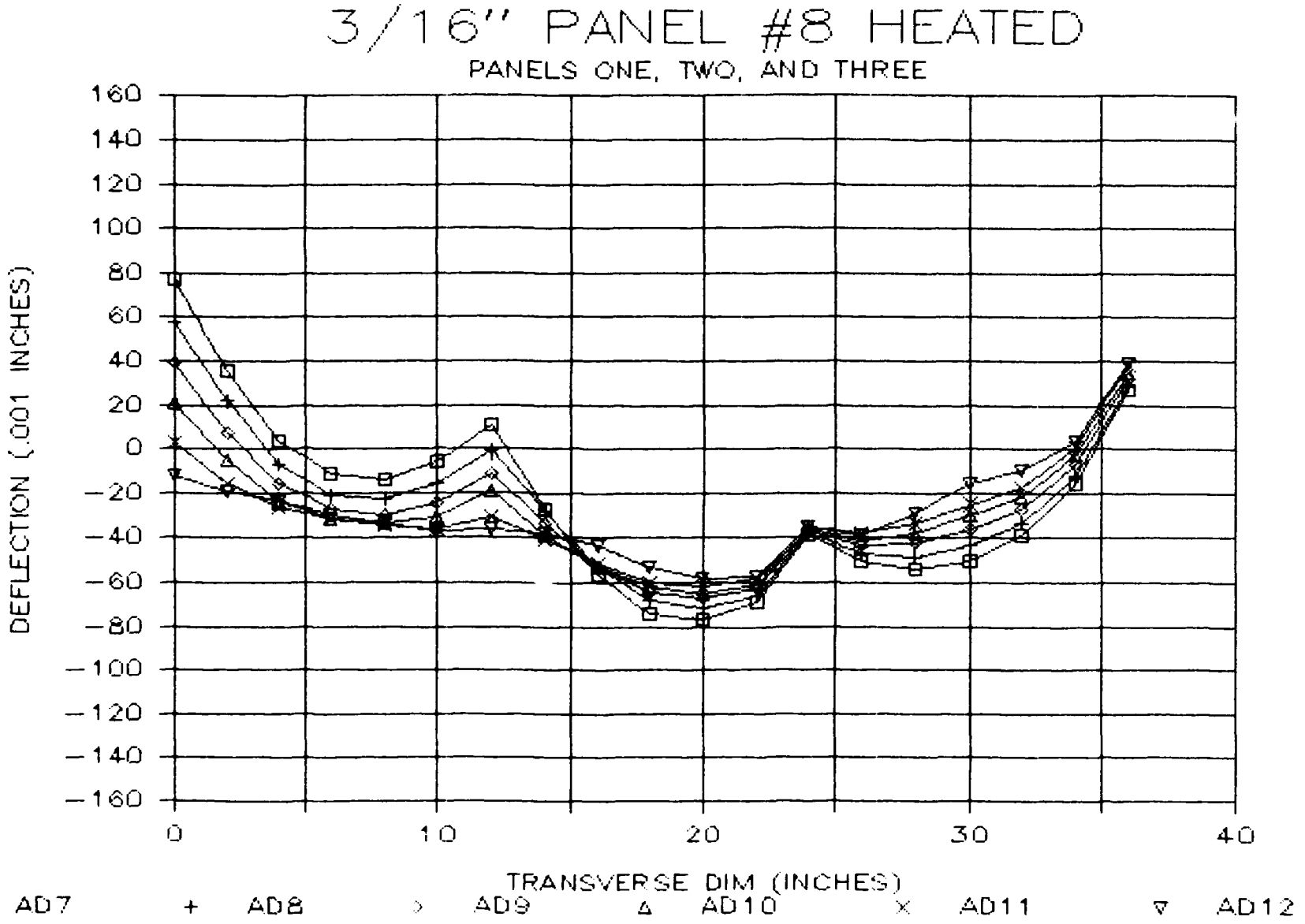

3 16" PANEL #5 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.0001 INCHES)
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD7
AD8
AD9
AD10
AD11
AD12

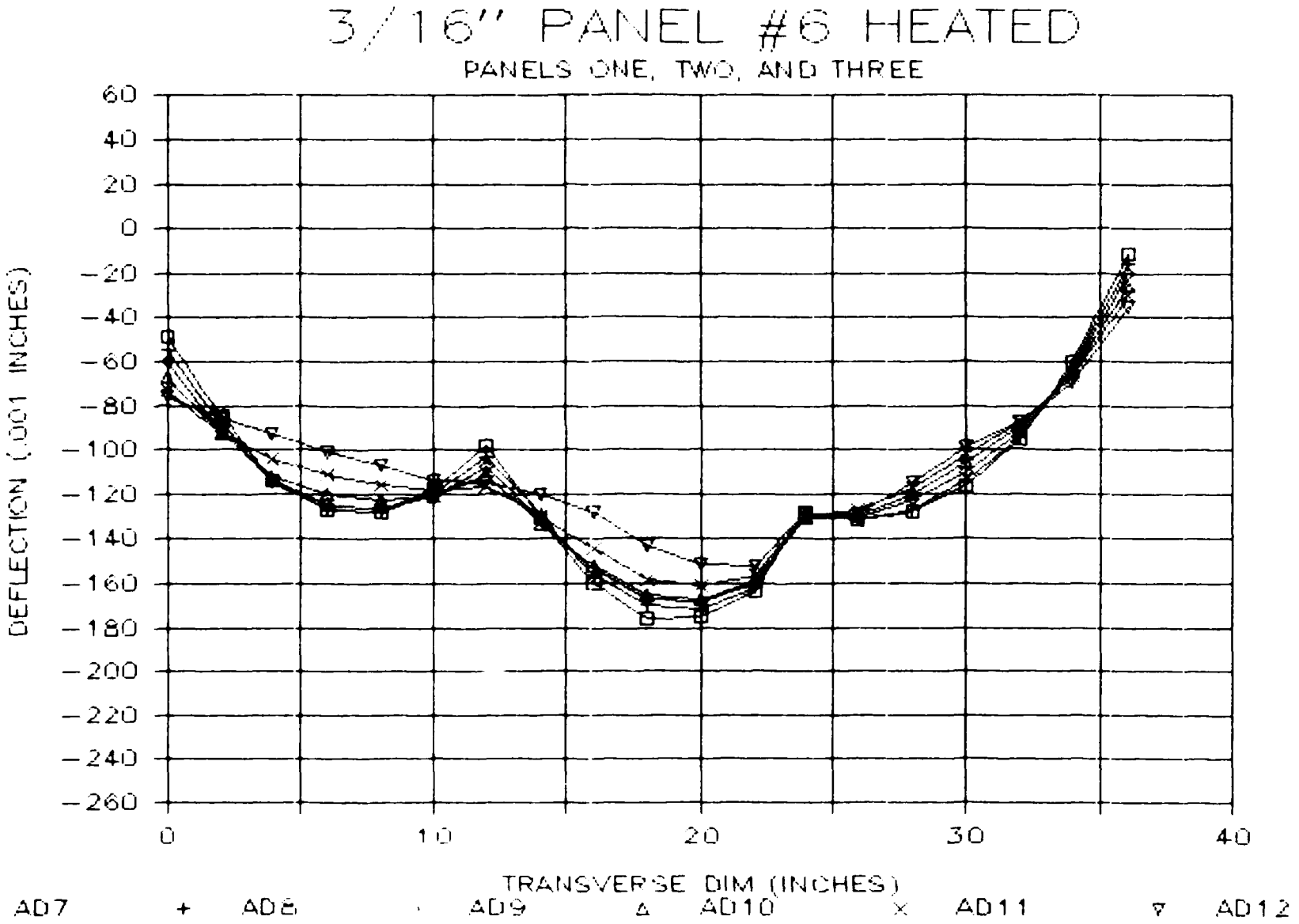
3/16" PANEL #4 HEATED

PANELS ONE, TWO, AND THREE




3/16" PANEL #2 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD7
AD8
AD9
AD10
AD11
AD12

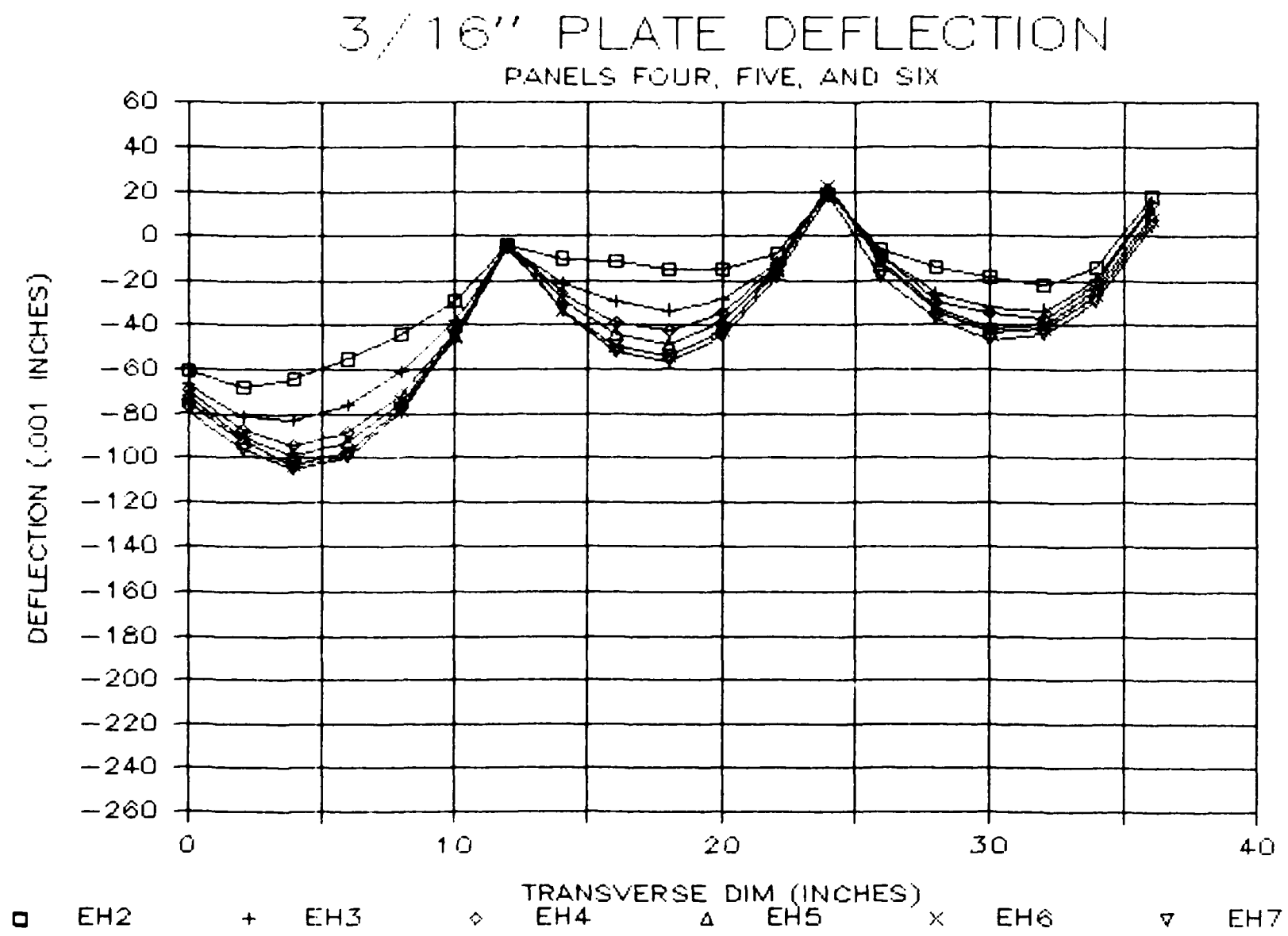

3/16" PANEL #8 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD7
AD8
AD9
AD10
AD11
AD12

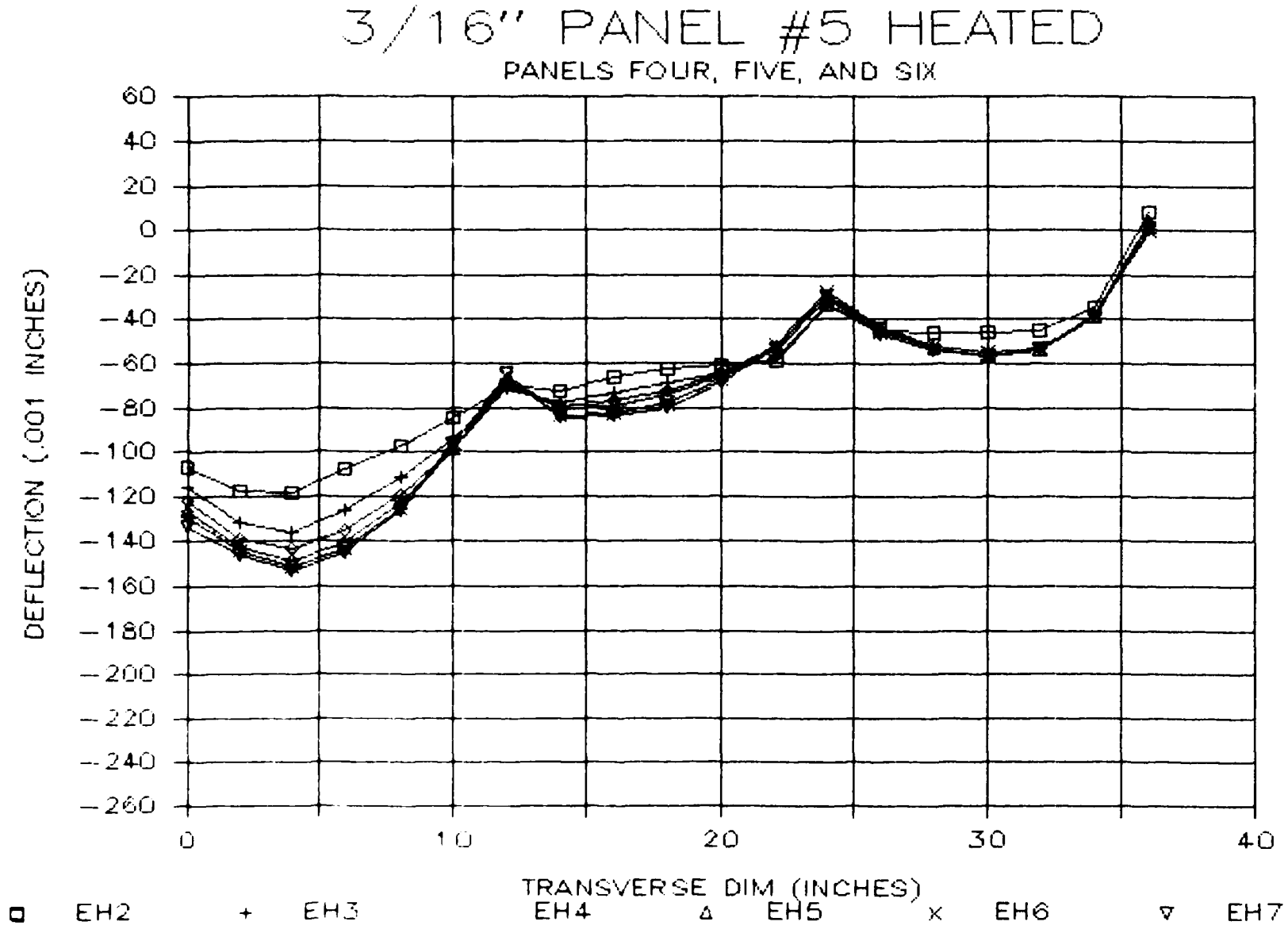

3/16" PANEL #6 HEATED
PANELS ONE, TWO, AND THREE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
AD7
AD8
AD9
AD10
AD11
AD12

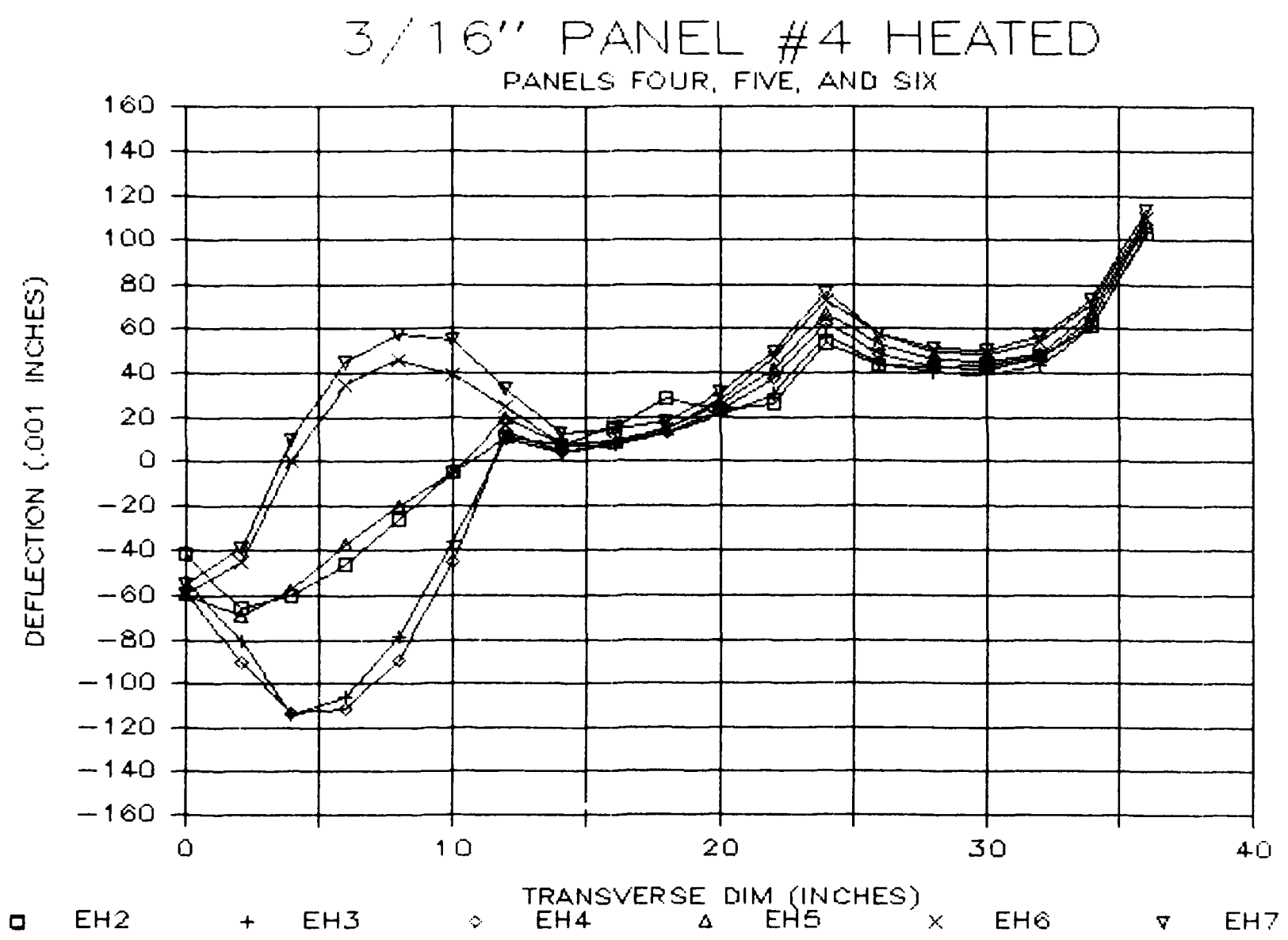
APPENDIX O

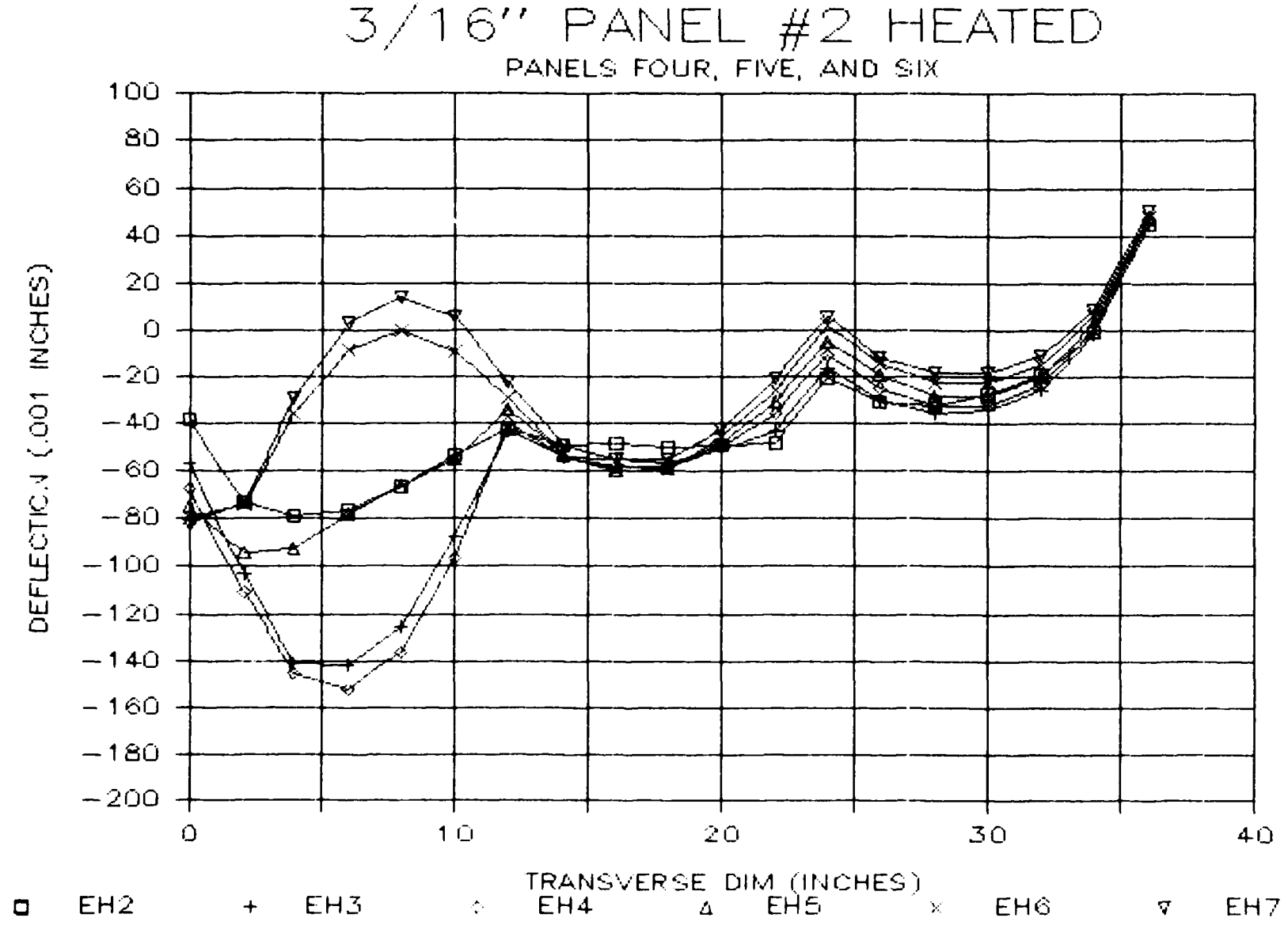
GRAPHS OF THE 3/16" STIFFENED PLATE TRANSVERSE OUT-OF-PLANE DEFLECTION READINGS FOR LINES EH2 THROUGH EH7

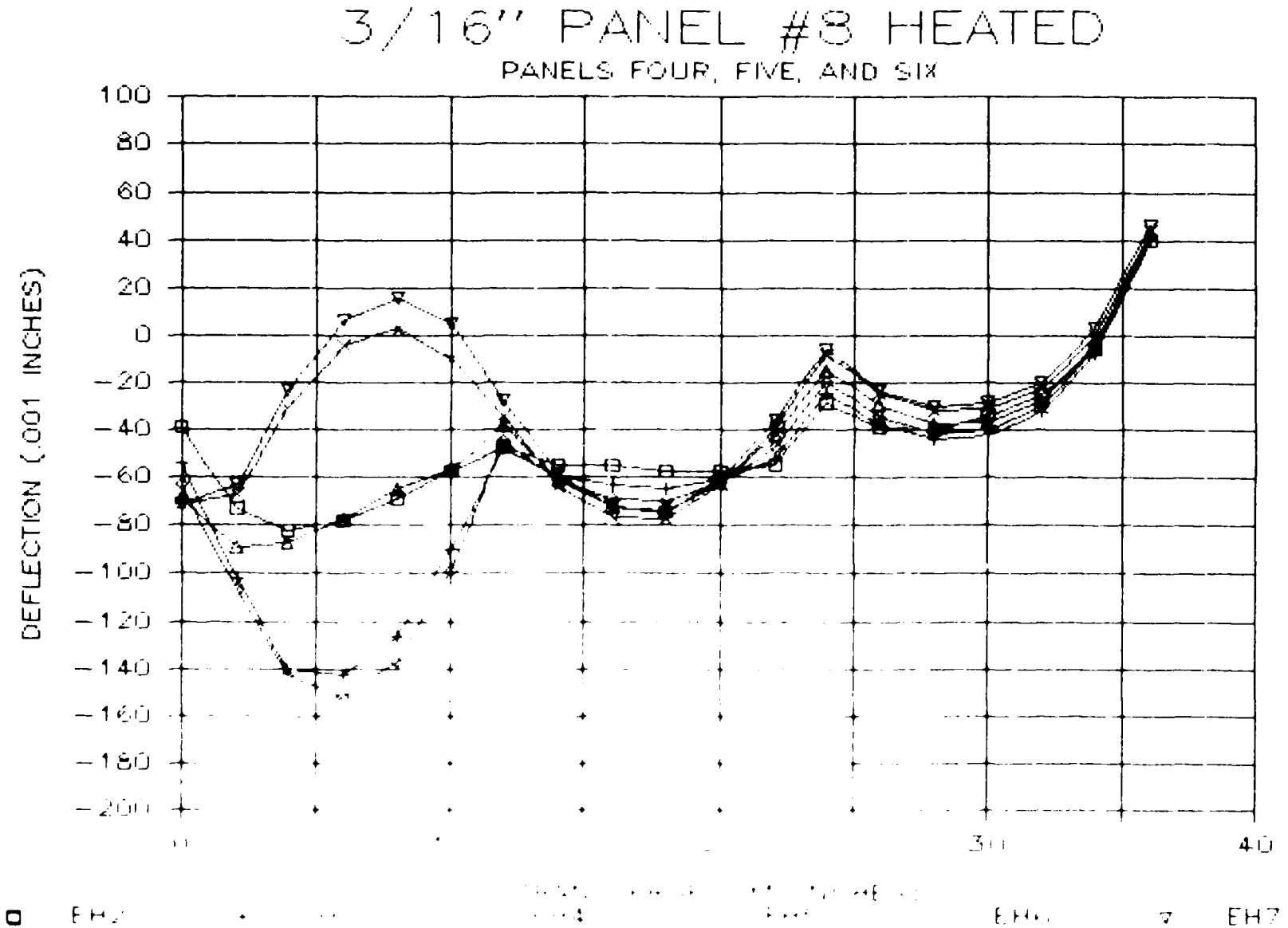
The horizontal coordinate is the transverse displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

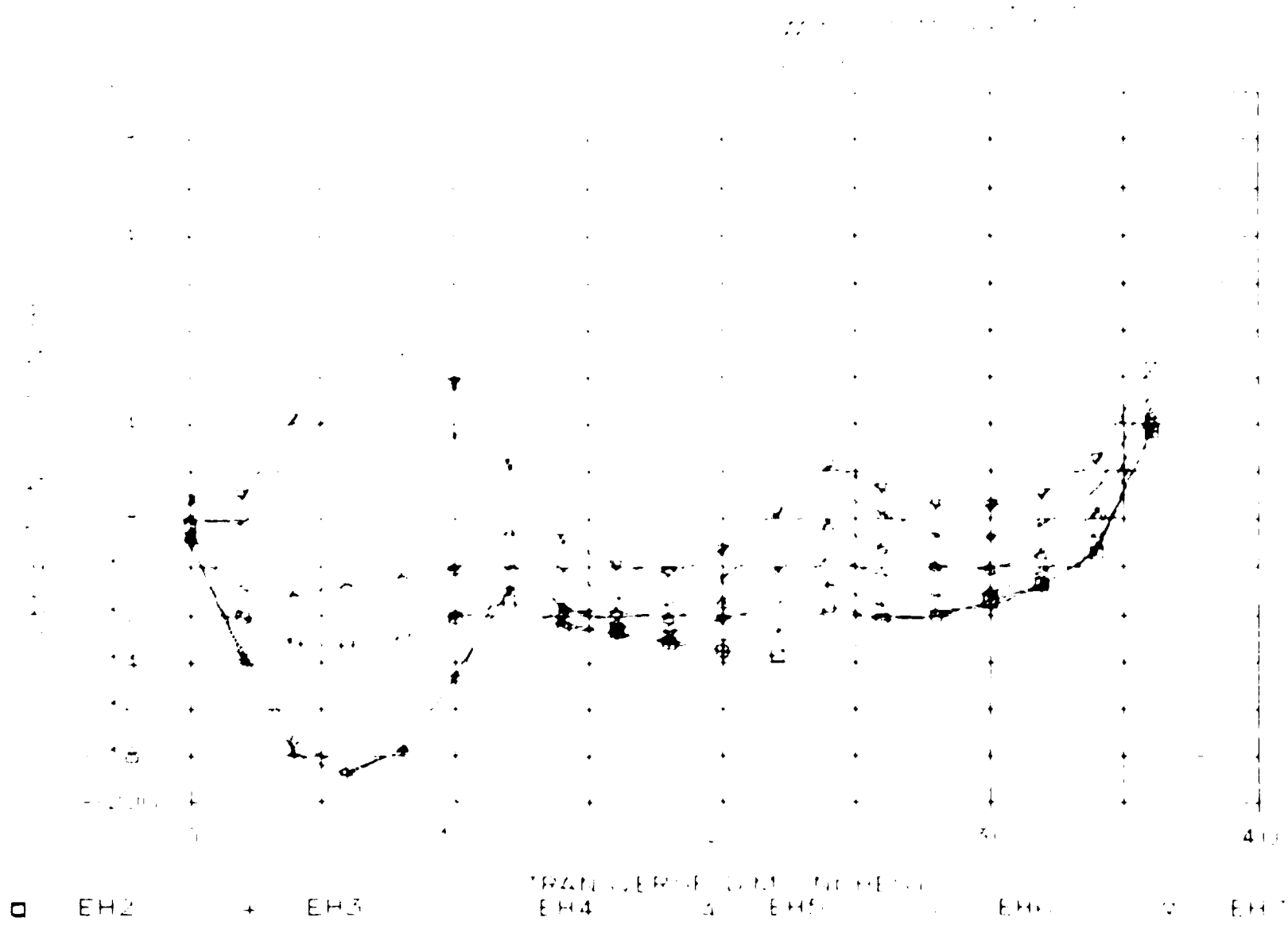

3/16" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH2
EH3
EH4
EH5
EH6
EH7


3/16" PANEL #5 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH2
EH3
EH4
EH5
EH6
EH7


3/16" PANEL #4 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH2
EH3
EH4
EH5
EH6
EH7


3/16" PANEL #2 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH2
EH3
EH4
EH5
EH6
EH7

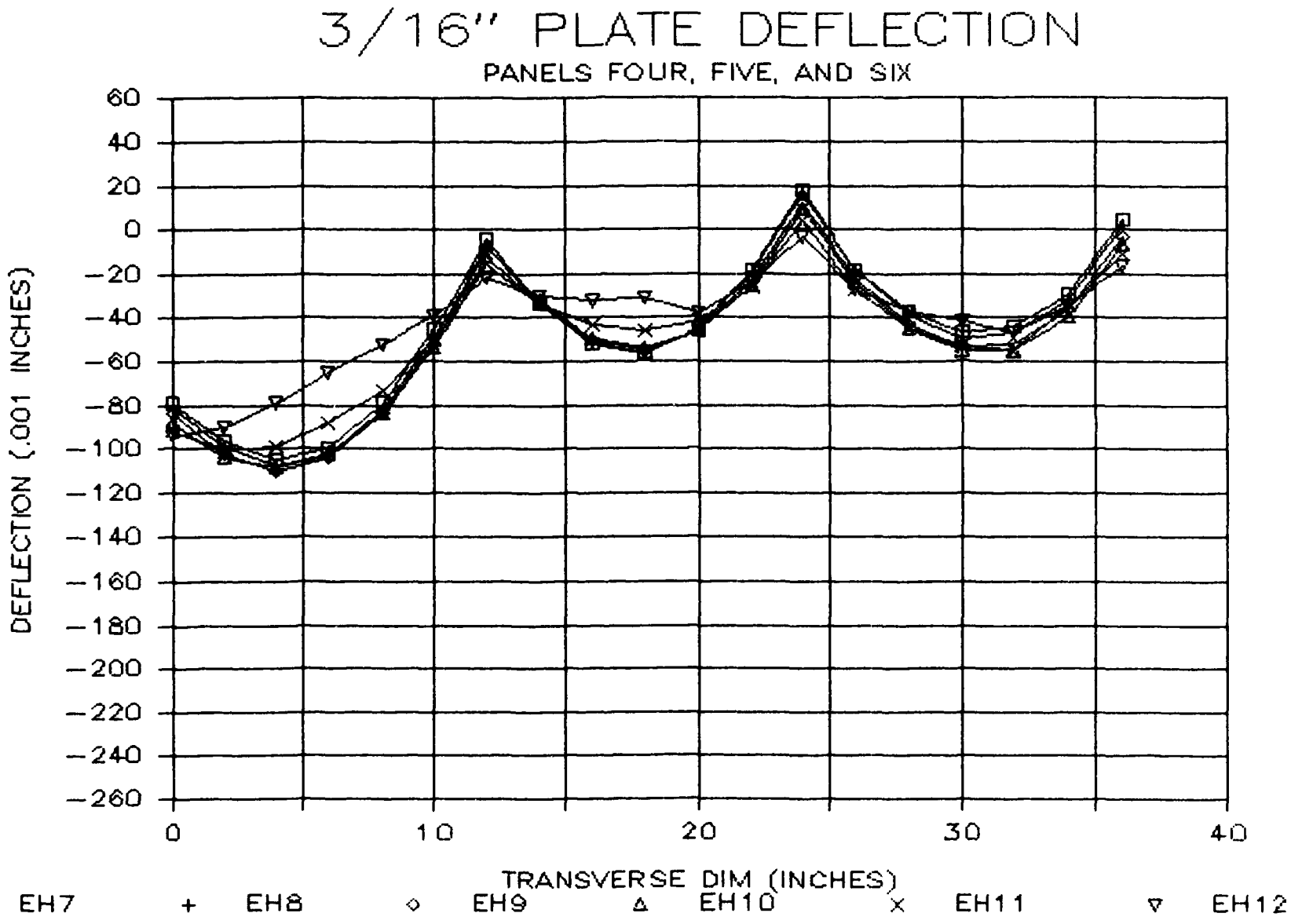

3/16" PANEL #8 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
30
40
EH7

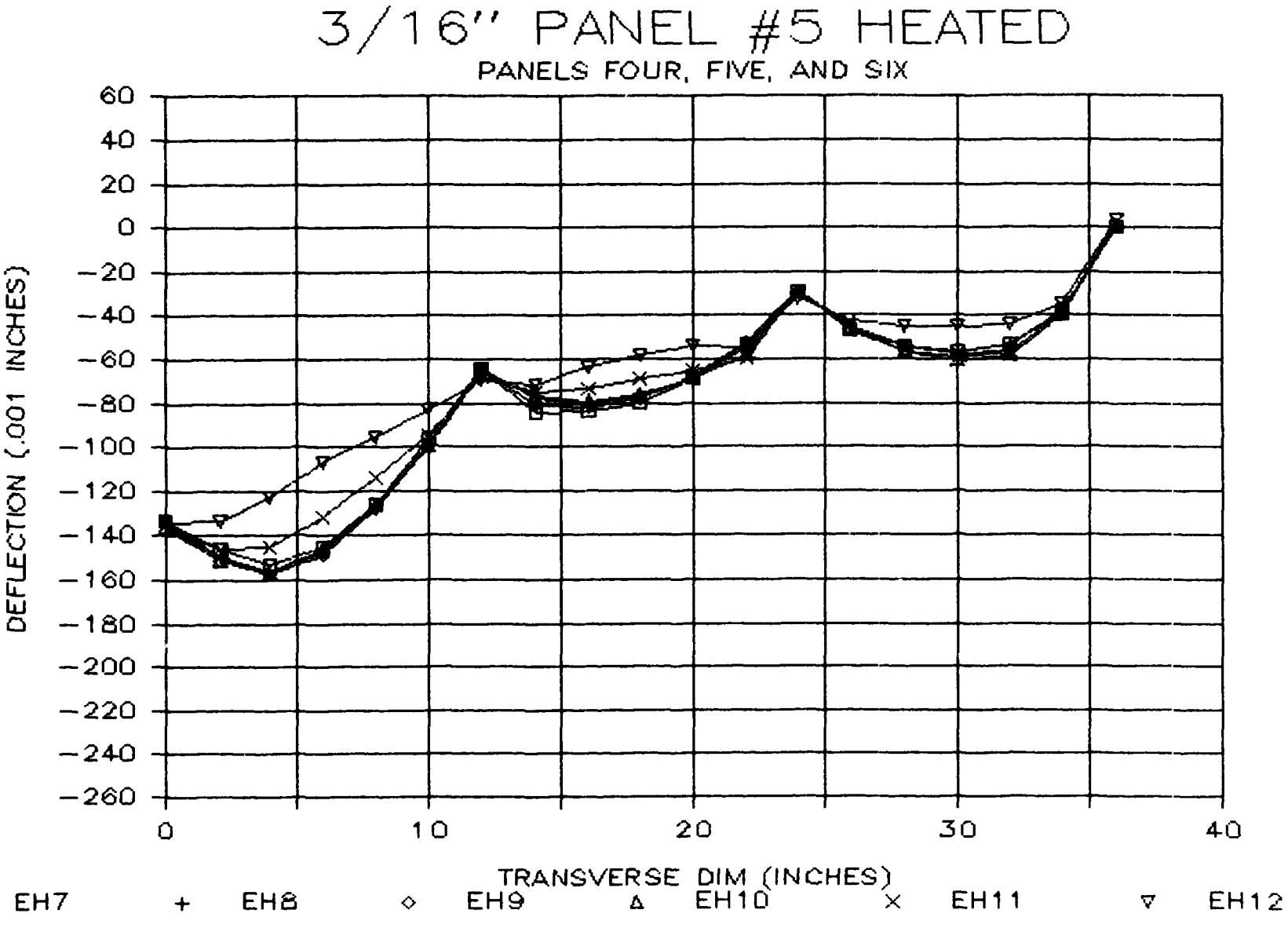

EH2
EH3
EH4
EH5

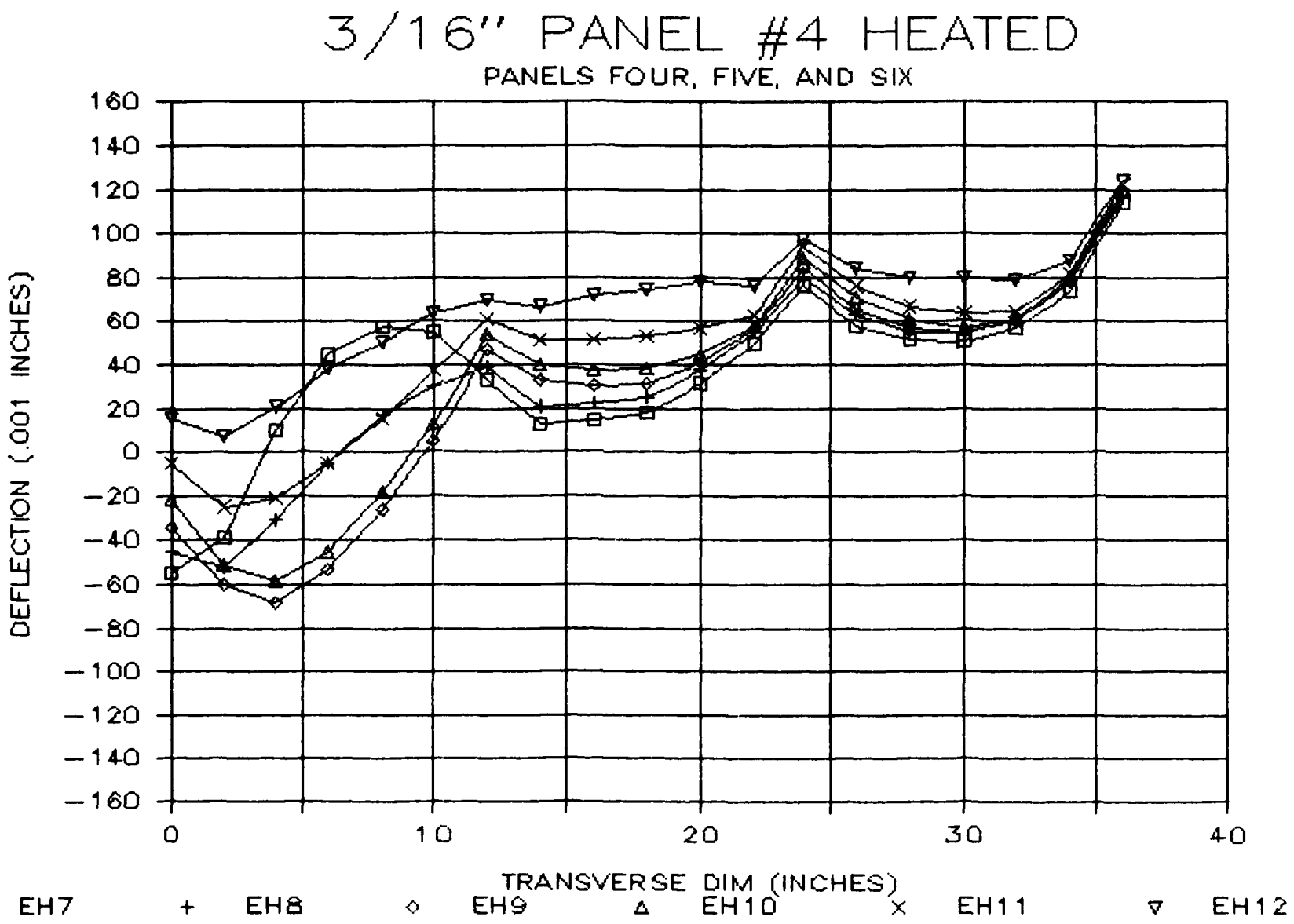
APPENDIX P

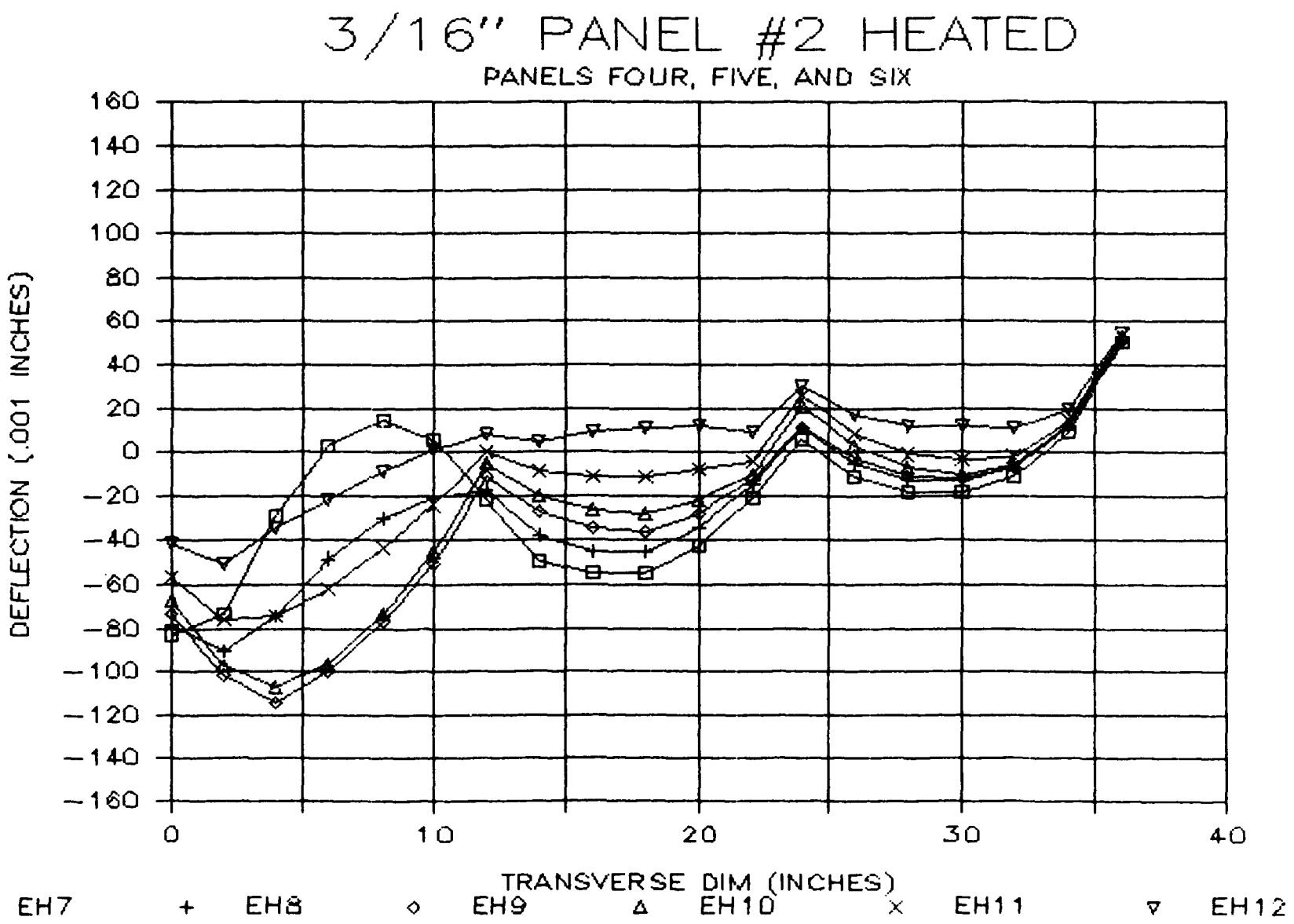
GRAPHS OF THE 3/16" STIFFENED PLATE TRANSVERSE OUT-OF-PLANE DEFLECTION READINGS FOR LINES EH7 THROUGH EH12

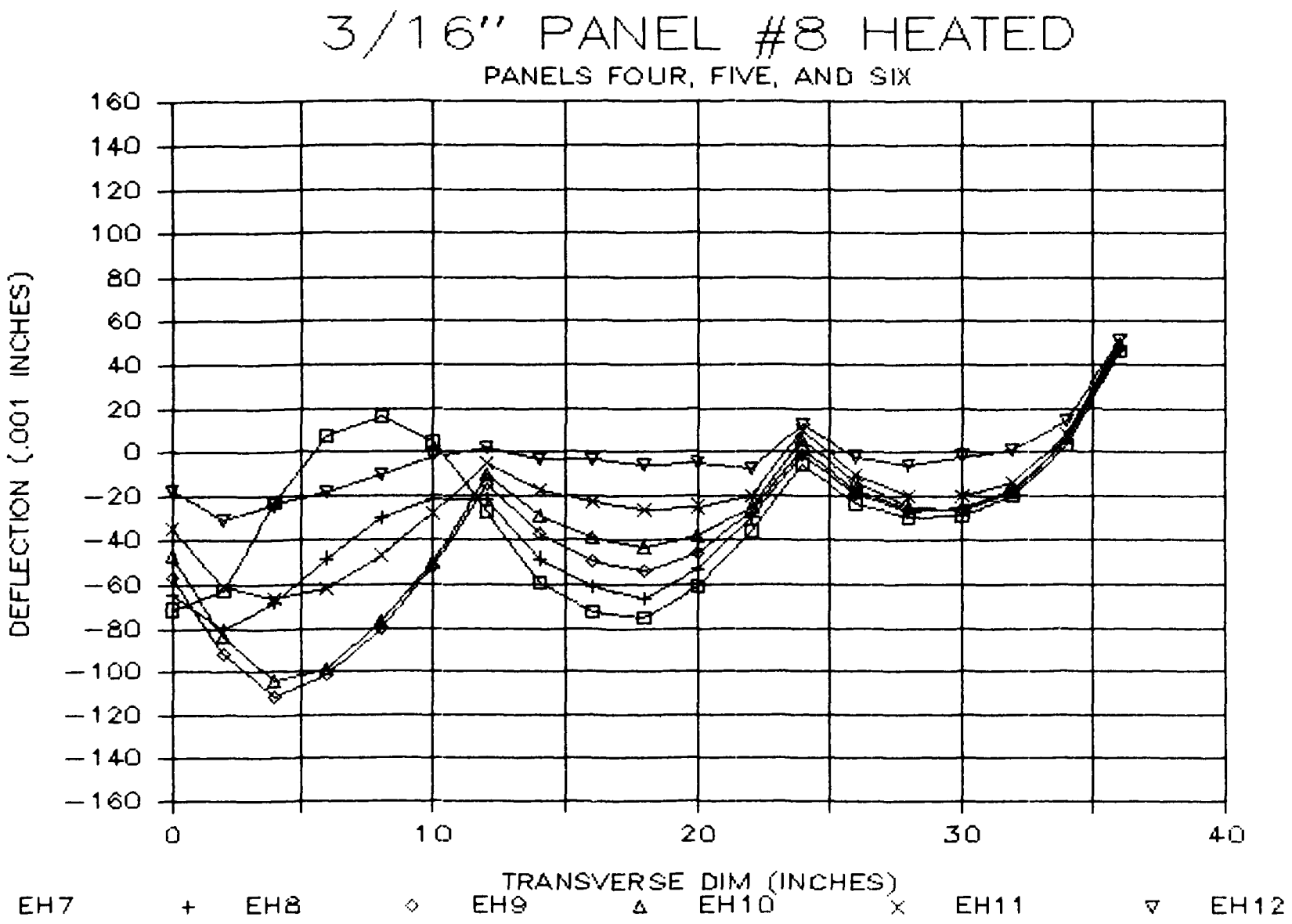
The horizontal coordinate is the transverse displacement. measured in inches. and the vertical coordinate is out-of-plane deflection. measured in thousandths of an inch.

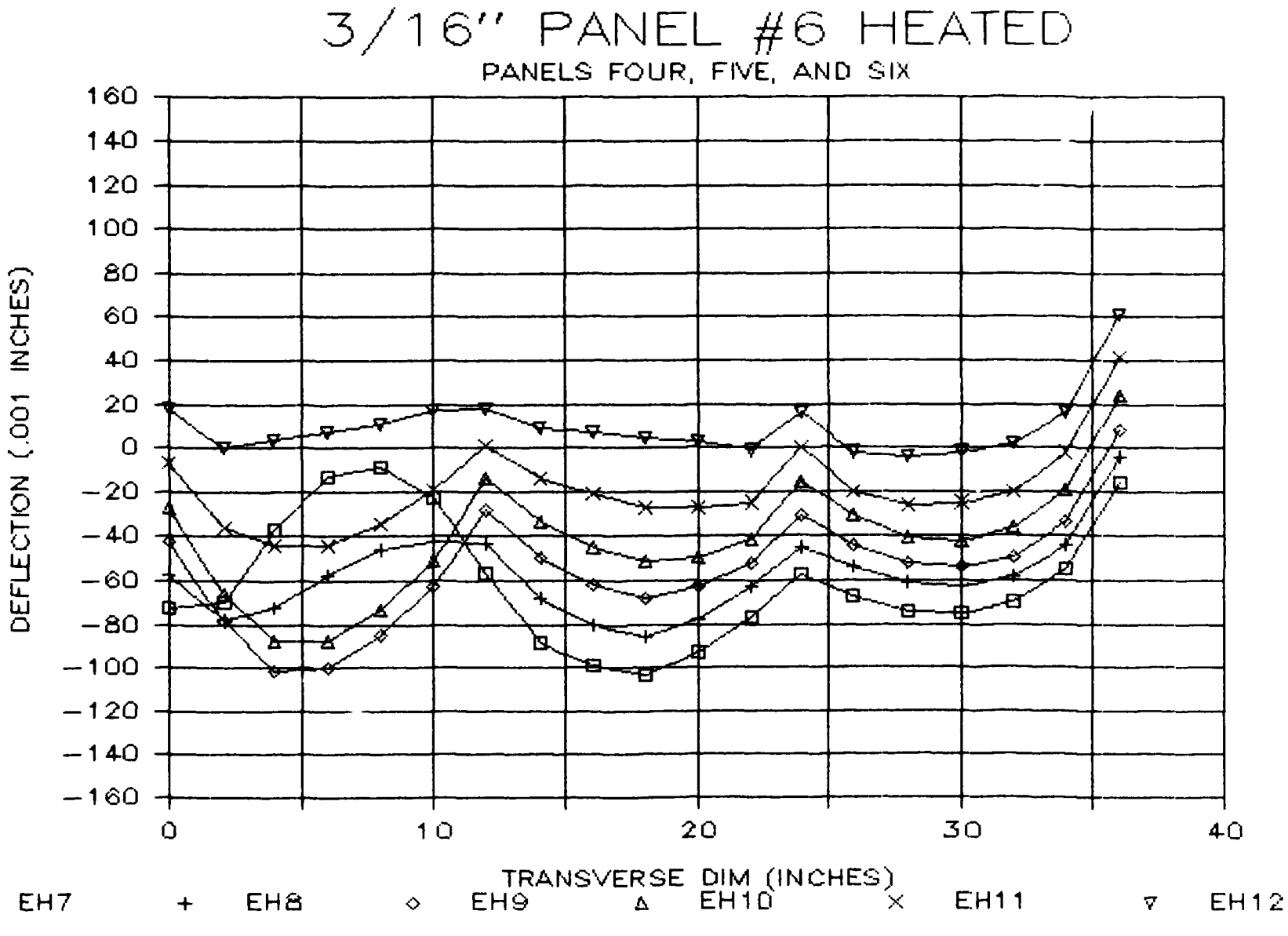

3/16" PLATE DEFLECTION
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH7
EH8
EH9
EH10
EH11
EH12


3/16" PANEL #5 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH7
EH8
EH9
EH10
EH11
EH12


3/16" PANEL #4 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH7
EH8
EH9
EH10
EH11
EH12


3/16" PANEL #2 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH7
EH8
EH9
EH10
EH11
EH12

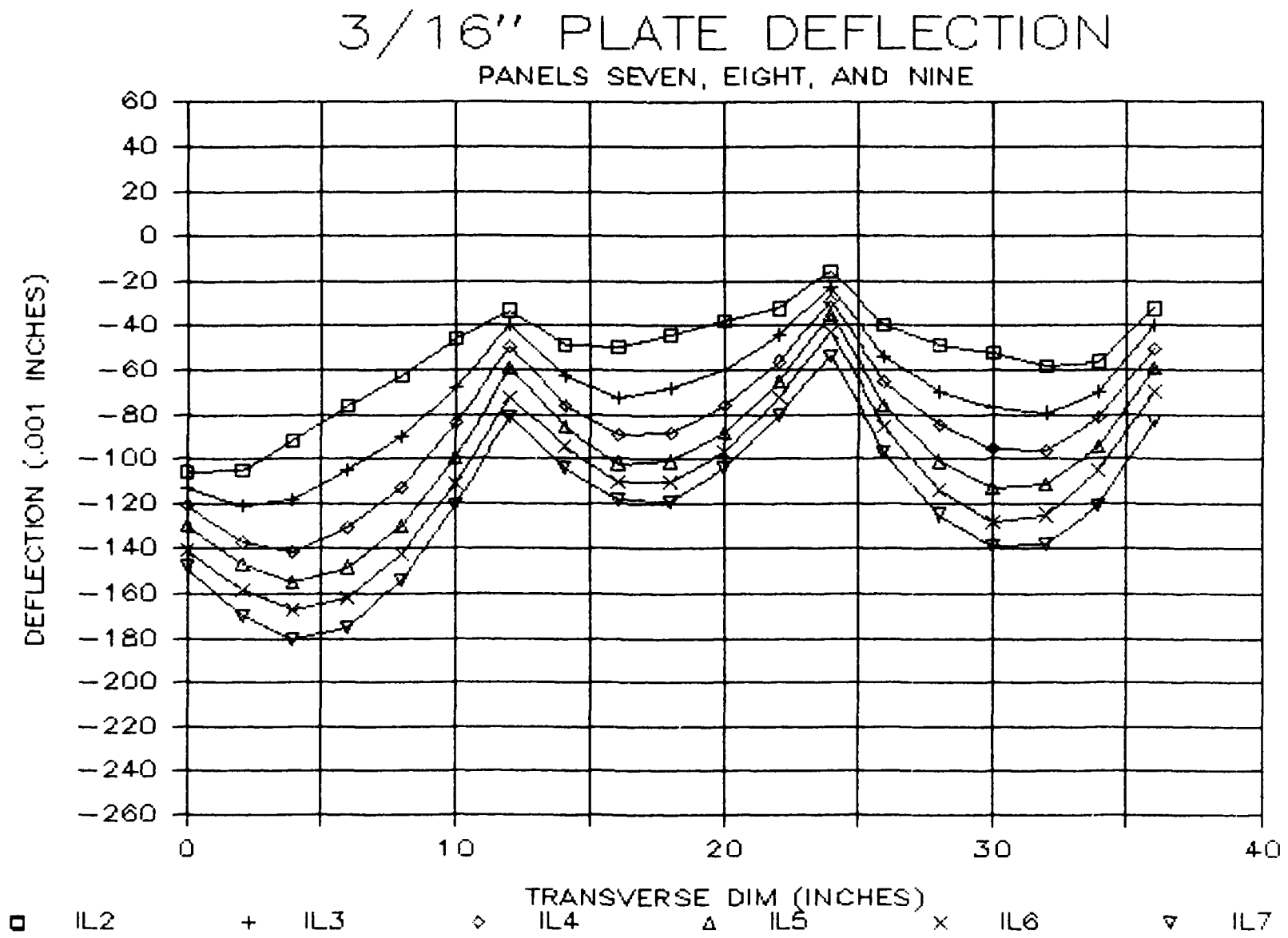

3/16" PANEL #8 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH7
EH8
EH9
EH10
EH11
EH12

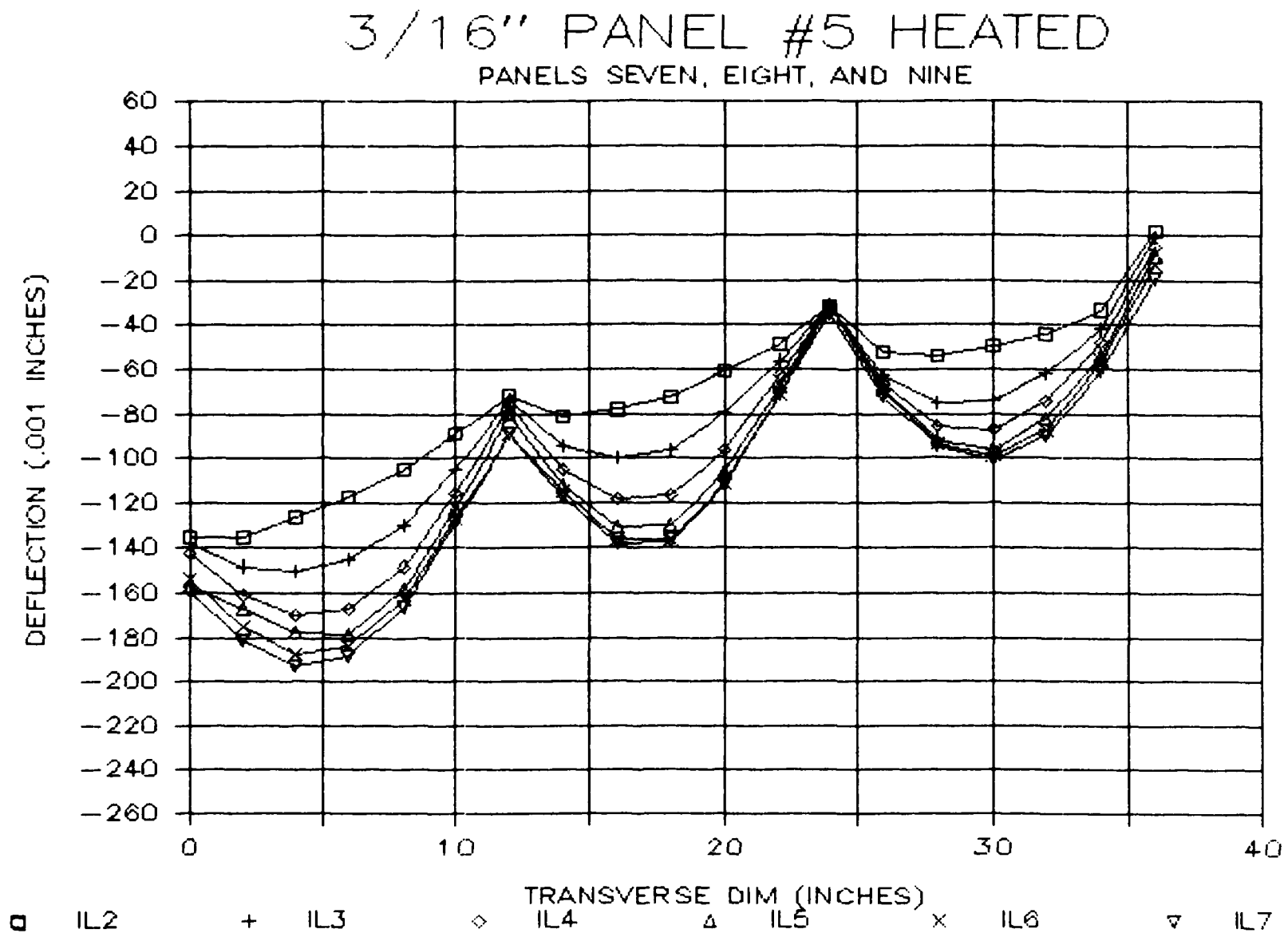

3/16" PANEL #6 HEATED
PANELS FOUR, FIVE, AND SIX
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
10
20
30
40
TRANSVERSE DIM (INCHES)
EH7
EH8
EH9
EH10
EH11
EH12

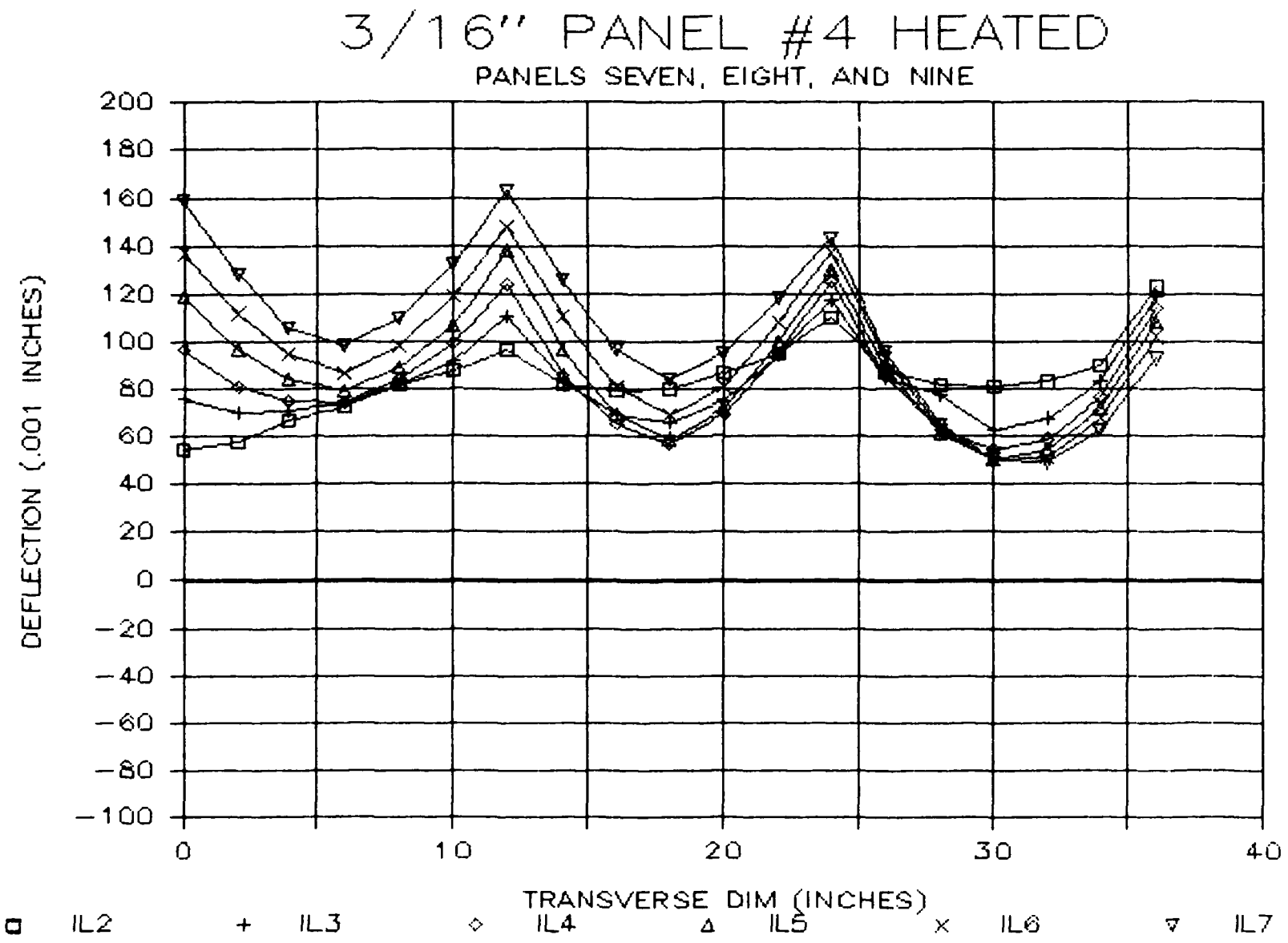
APPENDIX Q

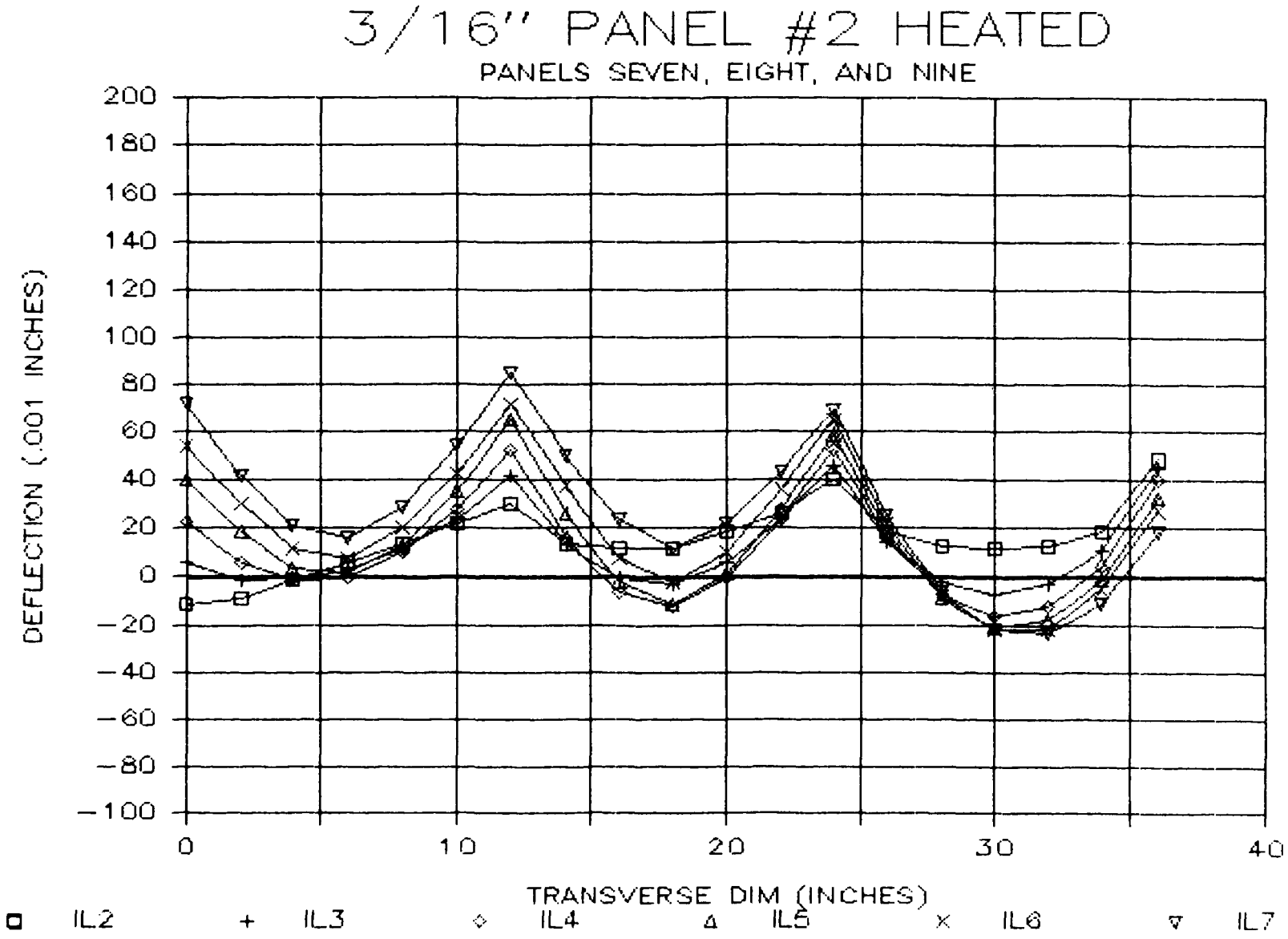
GRAPHS OF THE 3/16" STIFFENED PLATE TRANSVERSE OUT-OF-PLANE DEFLECTION READINGS FOR LINES IL2 THROUGH IL7

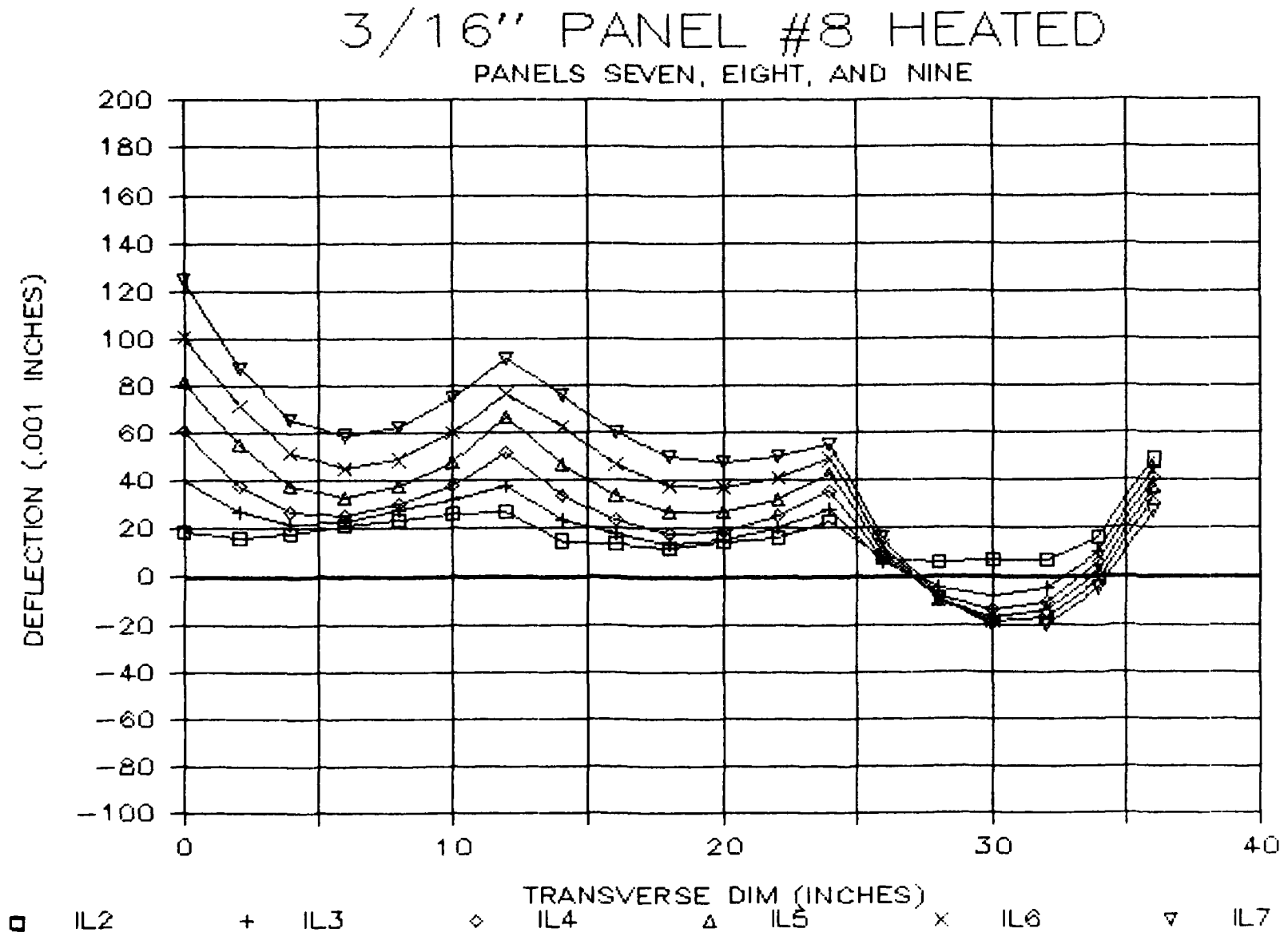
The horizontal coordinate is the transverse displacement. measured in inches. and the vertical coordinate is out-of-plane deflection. measured in thousandths of an inch.

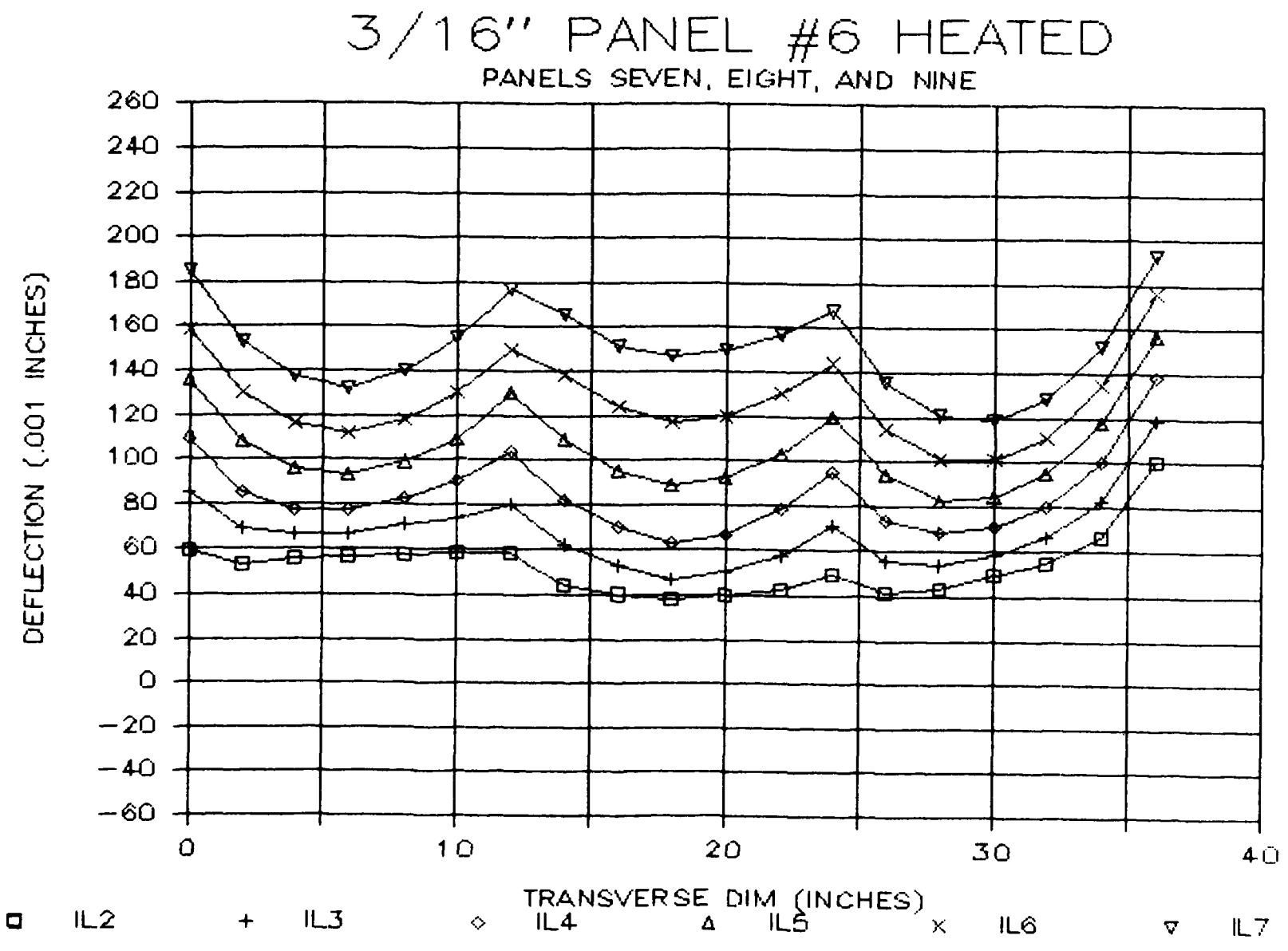

3/16" PLATE DEFLECTION
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL2
IL3
IL4
IL5
IL6
IL7


3/16" PANEL #5 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL2
IL3
IL4
IL5
IL6
IL7


3/16" PANEL #4 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL2
IL3
IL4
IL5
IL6
IL7


3/16" PANEL #2 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL2
IL3
IL4
IL5
IL6
IL7

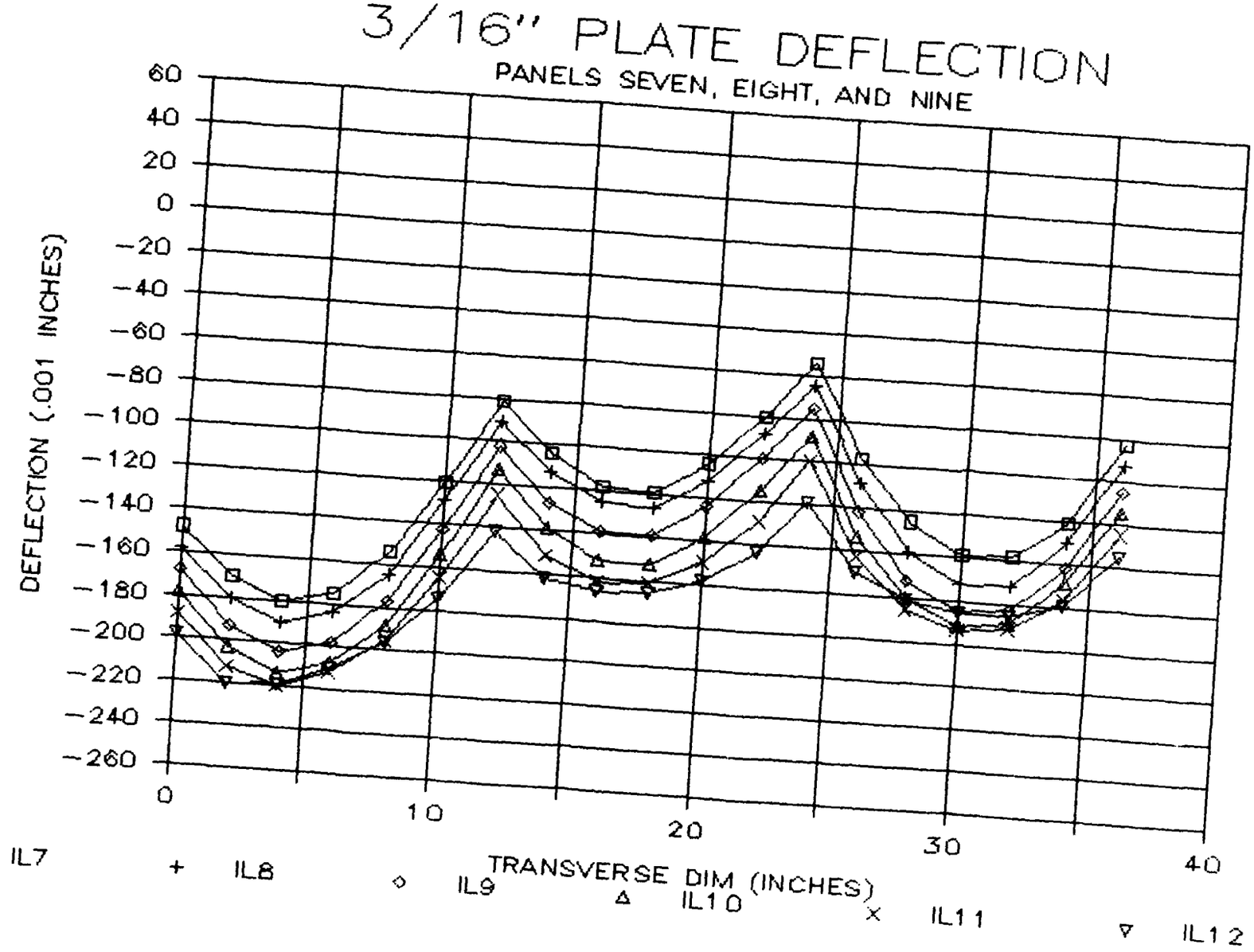

3/16" PANEL #8 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL2
IL3
IL4
IL5
IL6
IL7

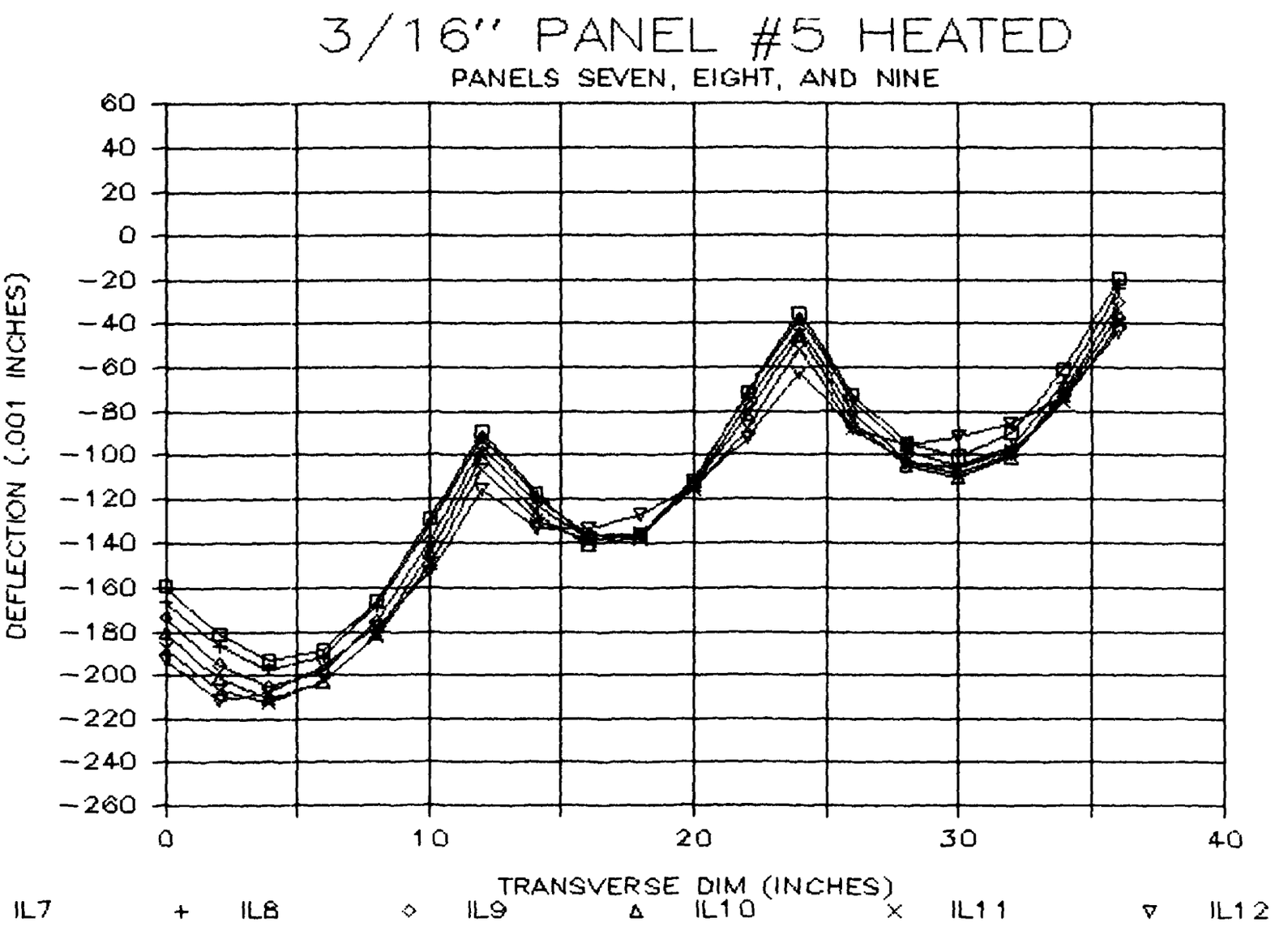

3/16" PANEL #6 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL2
IL3
IL4
IL5
IL6
IL7

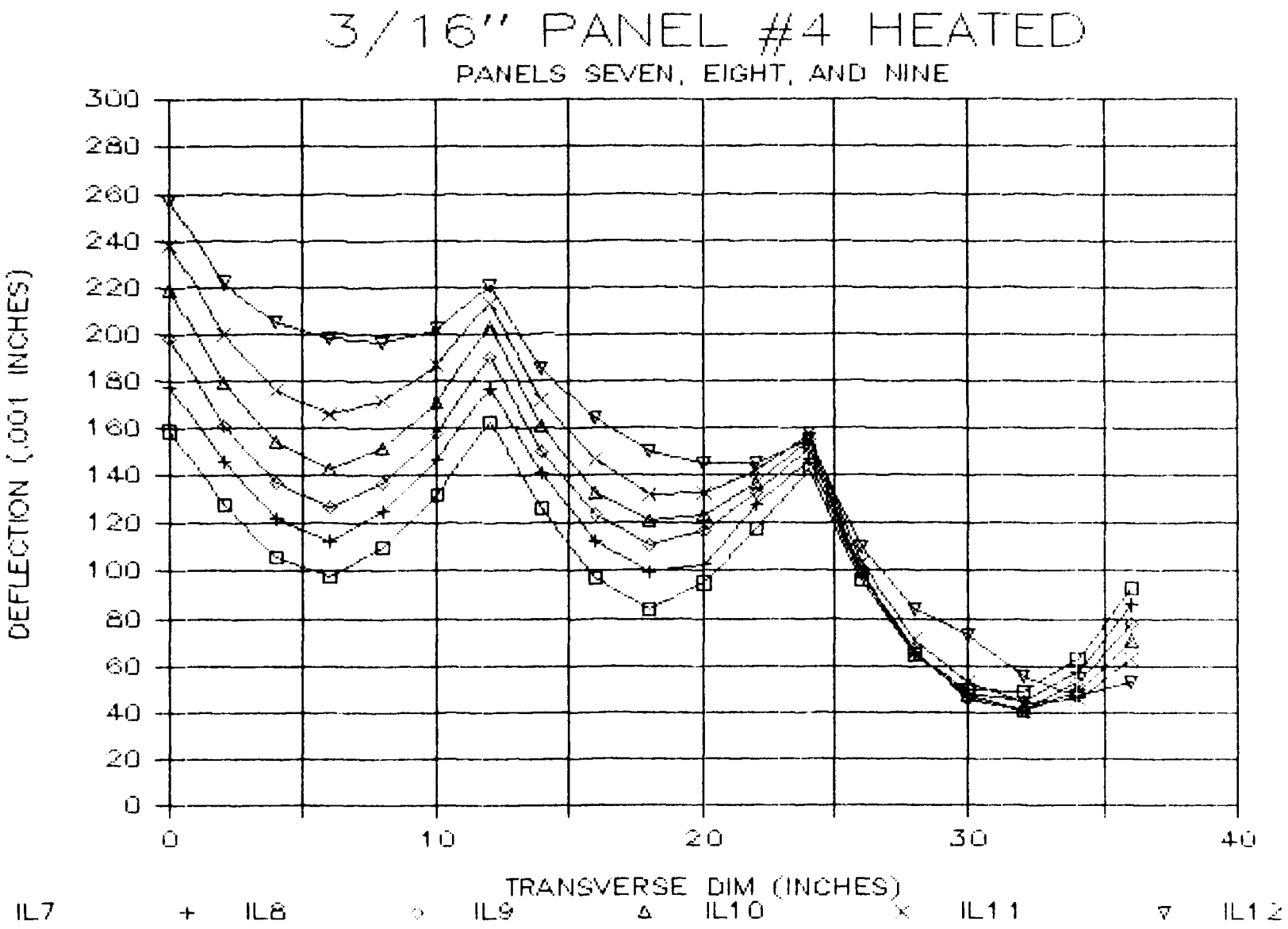
APPENDIX R

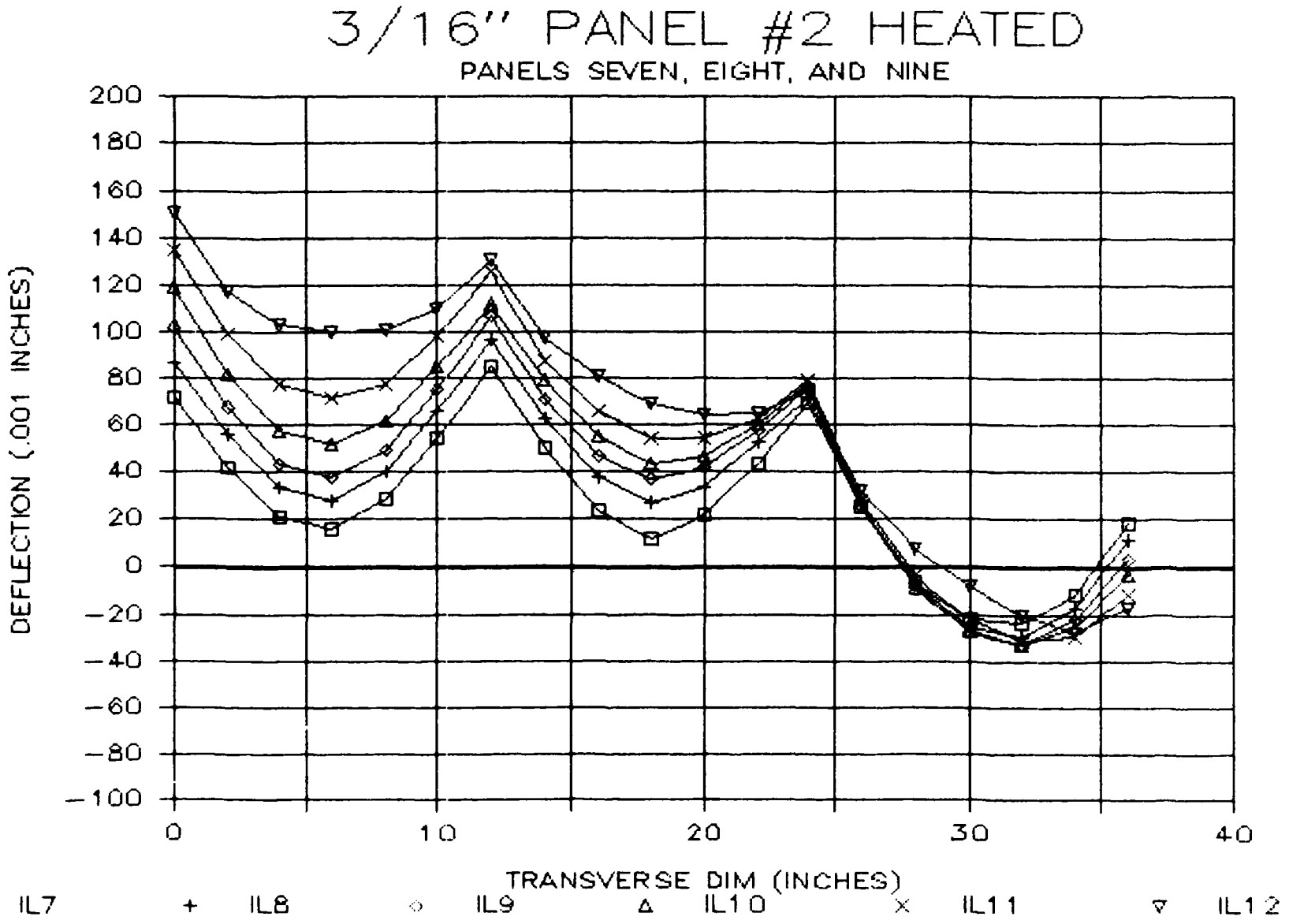
GRAPHS OF THE 3/16" STIFFENED PLATE TRANSVERSE OUT-OF-PLANE DEFLECTION READINGS FOR LINES IL7 THROUGH IL12

The horizontal coordinate is the transverse displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.


3/16" PLATE DEFLECTION
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL7
IL8
IL9
IL10
IL11
IL12

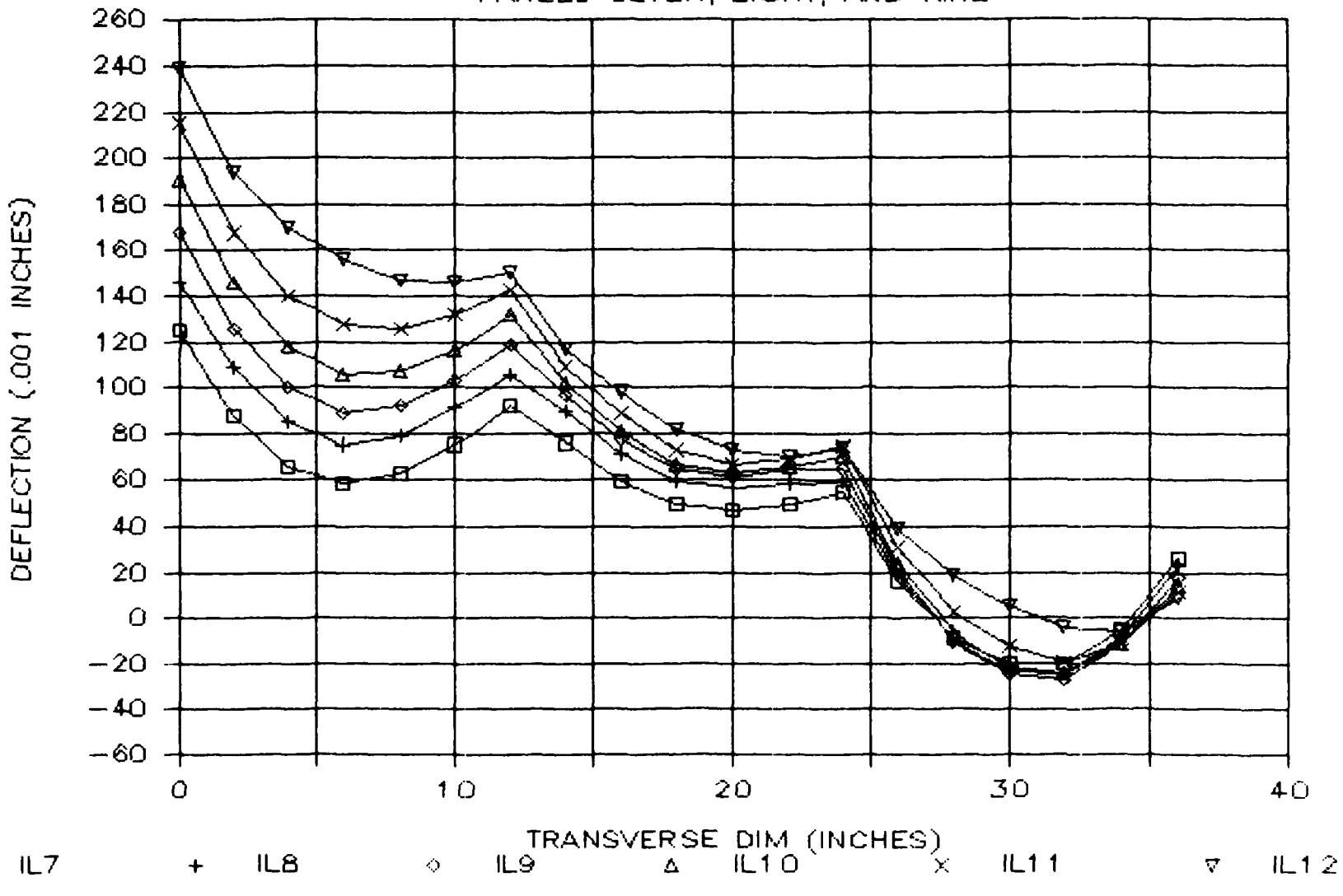

3/16" PANEL #5 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL7
IL8
IL9
IL10
IL11
IL12


3/16" PANEL #4 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL7
IL8
IL9
IL10
IL11
IL12


3/16" PANEL #2 HEATED
PANELS SEVEN, EIGHT, AND NINE
DEFLECTION (.001 INCHES)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
TRANSVERSE DIM (INCHES)
IL7
IL8
IL9
IL10
IL11
IL12

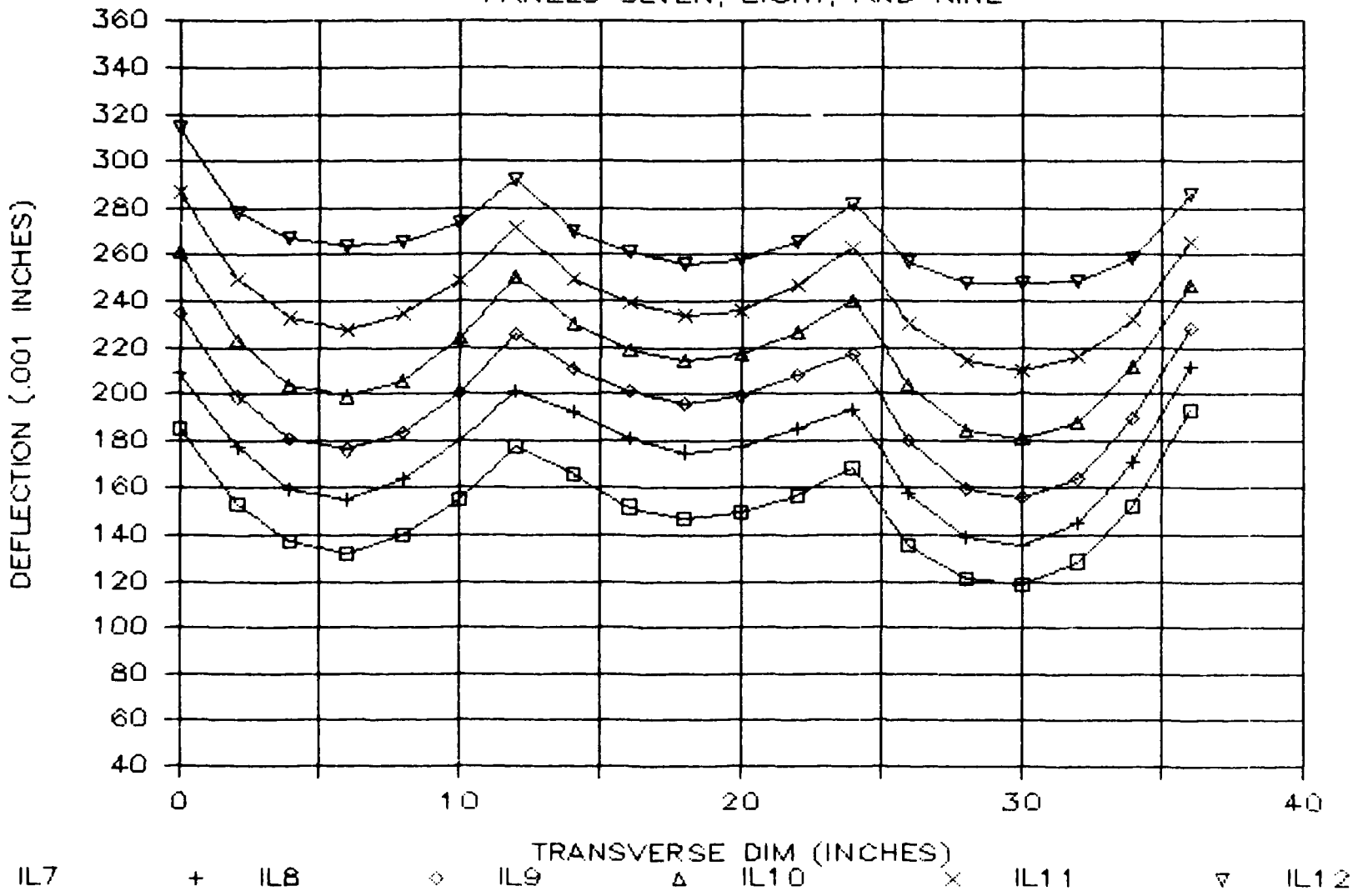
3/16" PANEL #8 HEATED

PANELS SEVEN, EIGHT, AND NINE



3/16" PANEL #6 HEATED

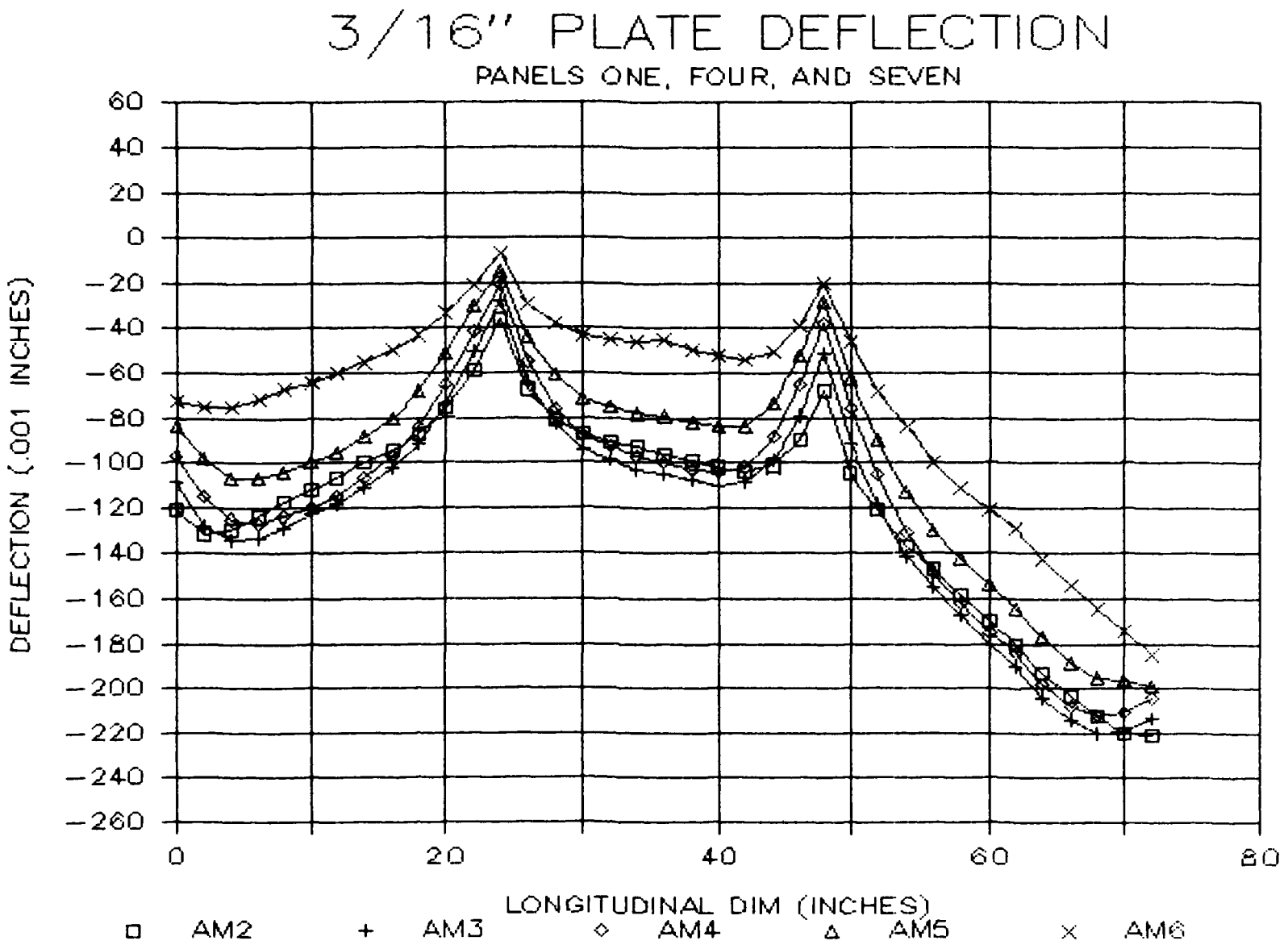
PANELS SEVEN, EIGHT, AND NINE

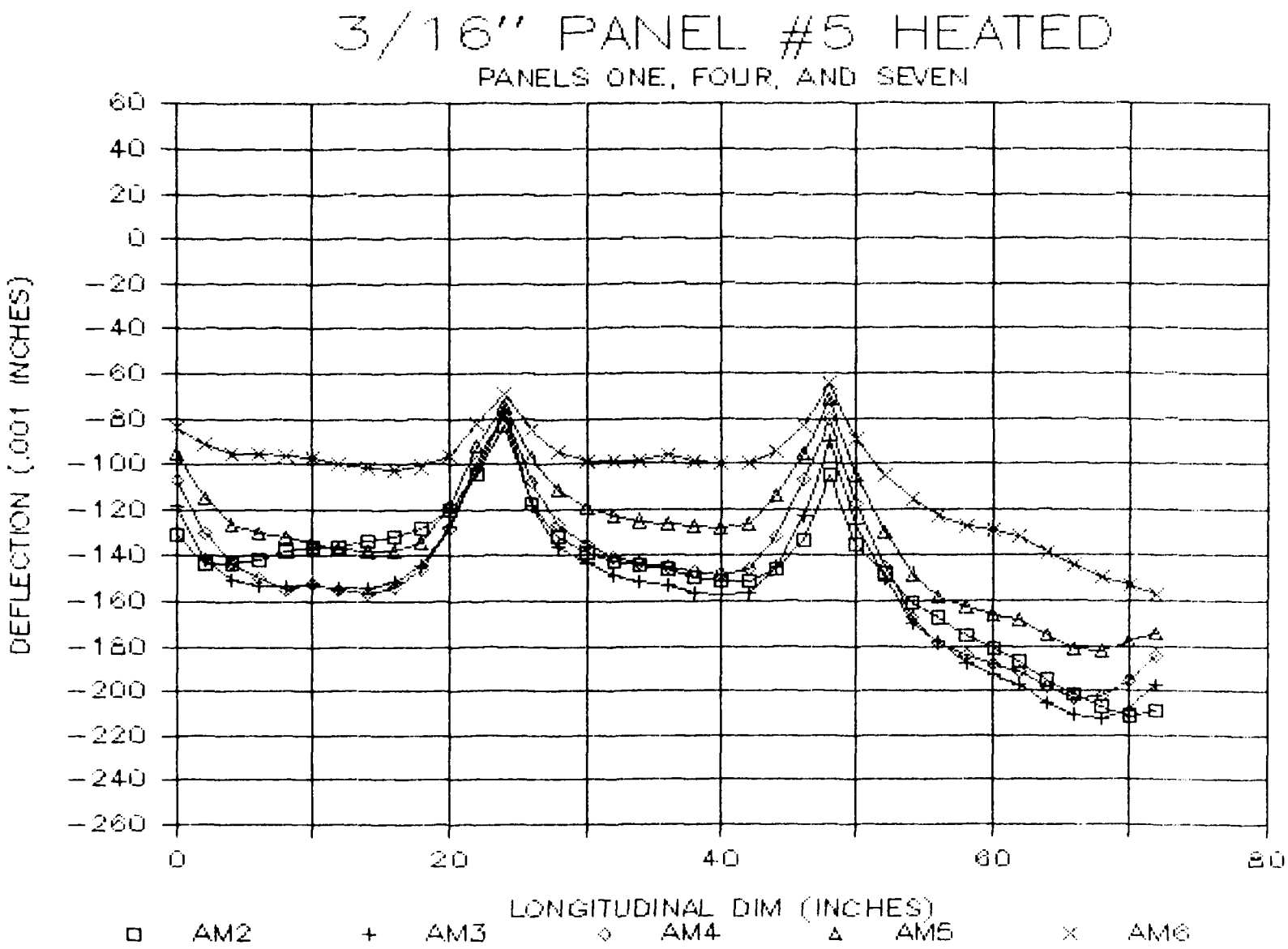


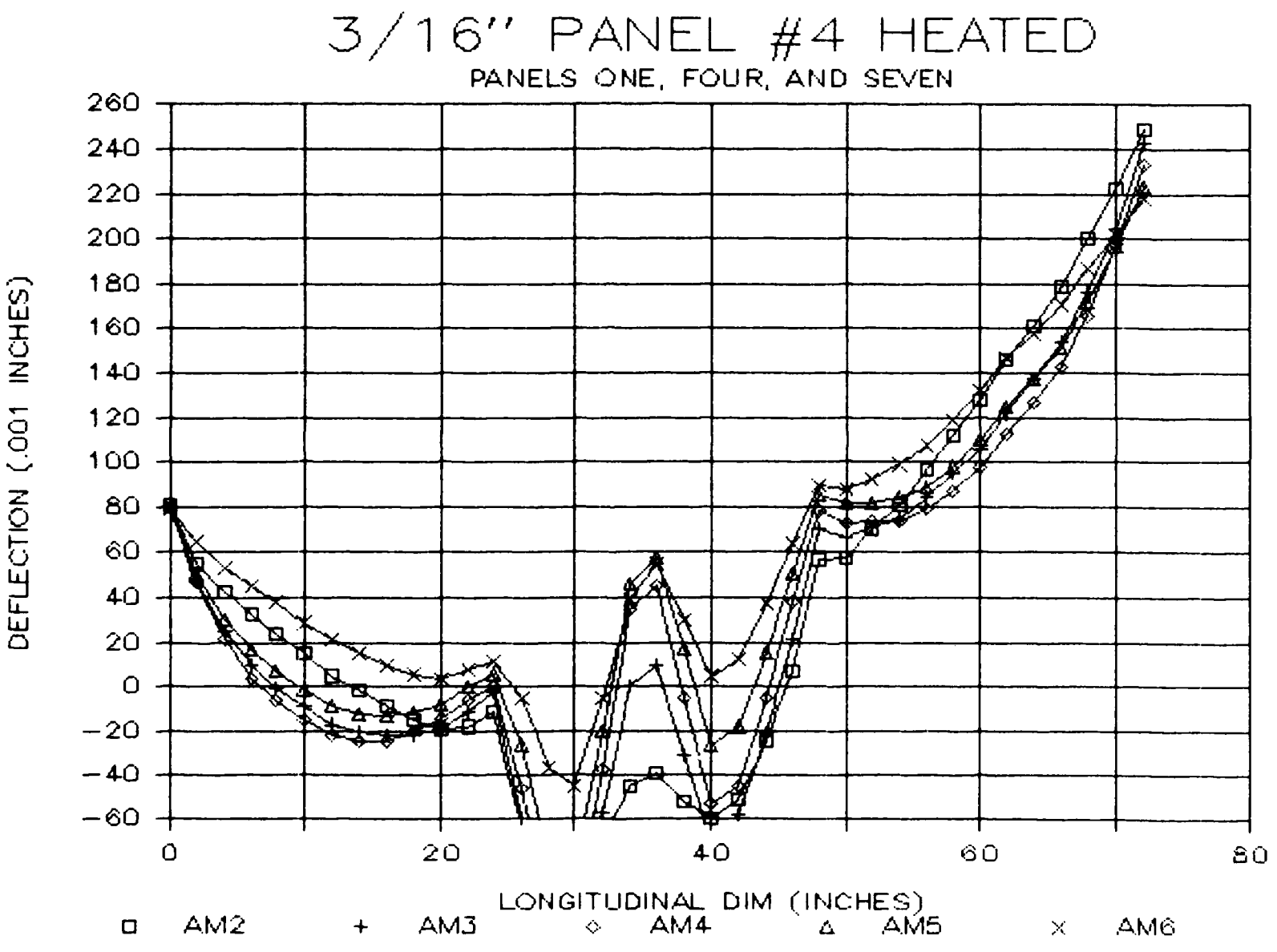
APPENDIX S

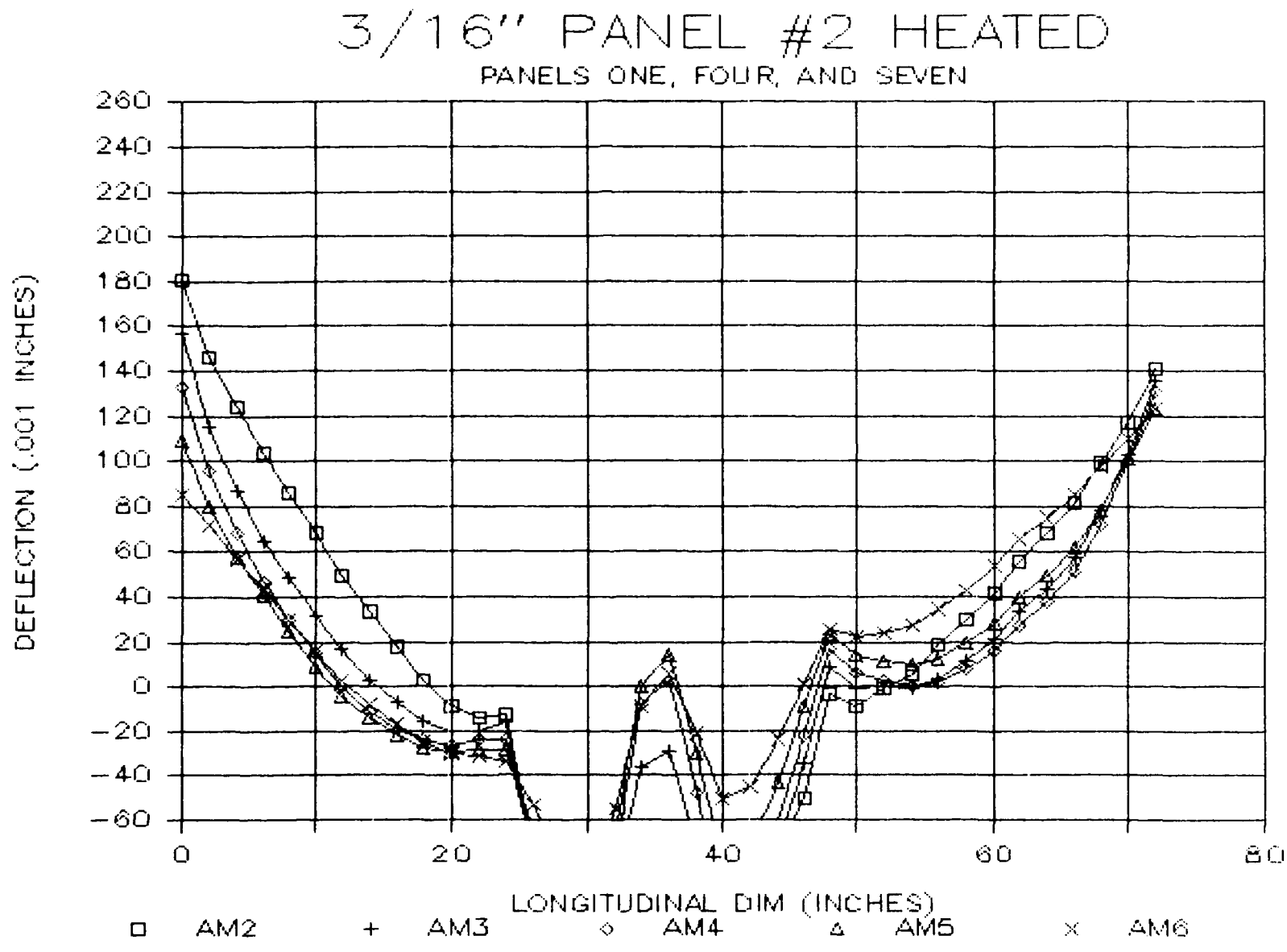
GRAPHS OF THE 3/16" STIFFENED PLATE LONGITUDINAL OUT-OF-PLANE DEFLECTION READINGS FOR LINES AM2 THROUGH AM6

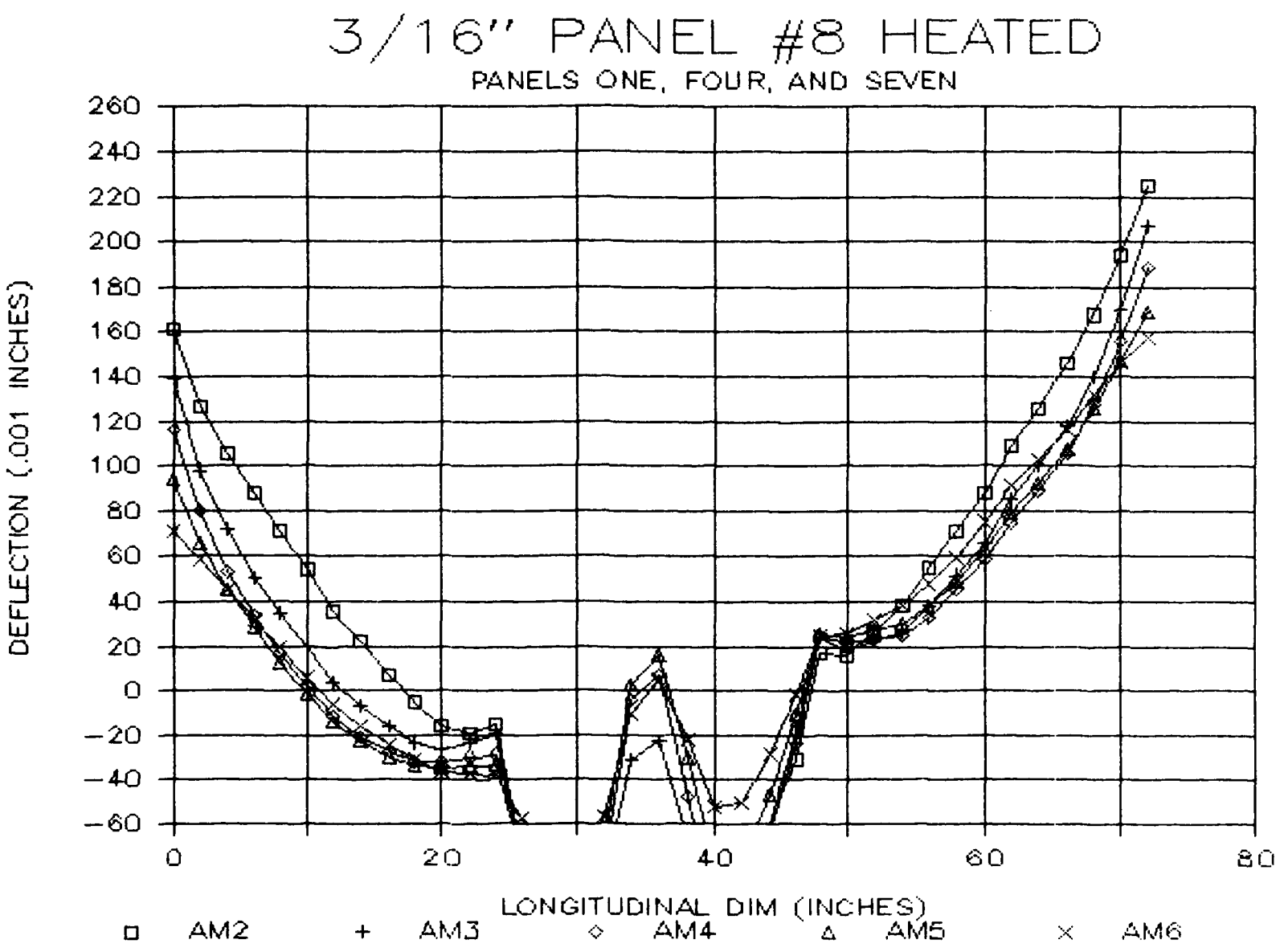
The horizontal coordinate is the longitudinal displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

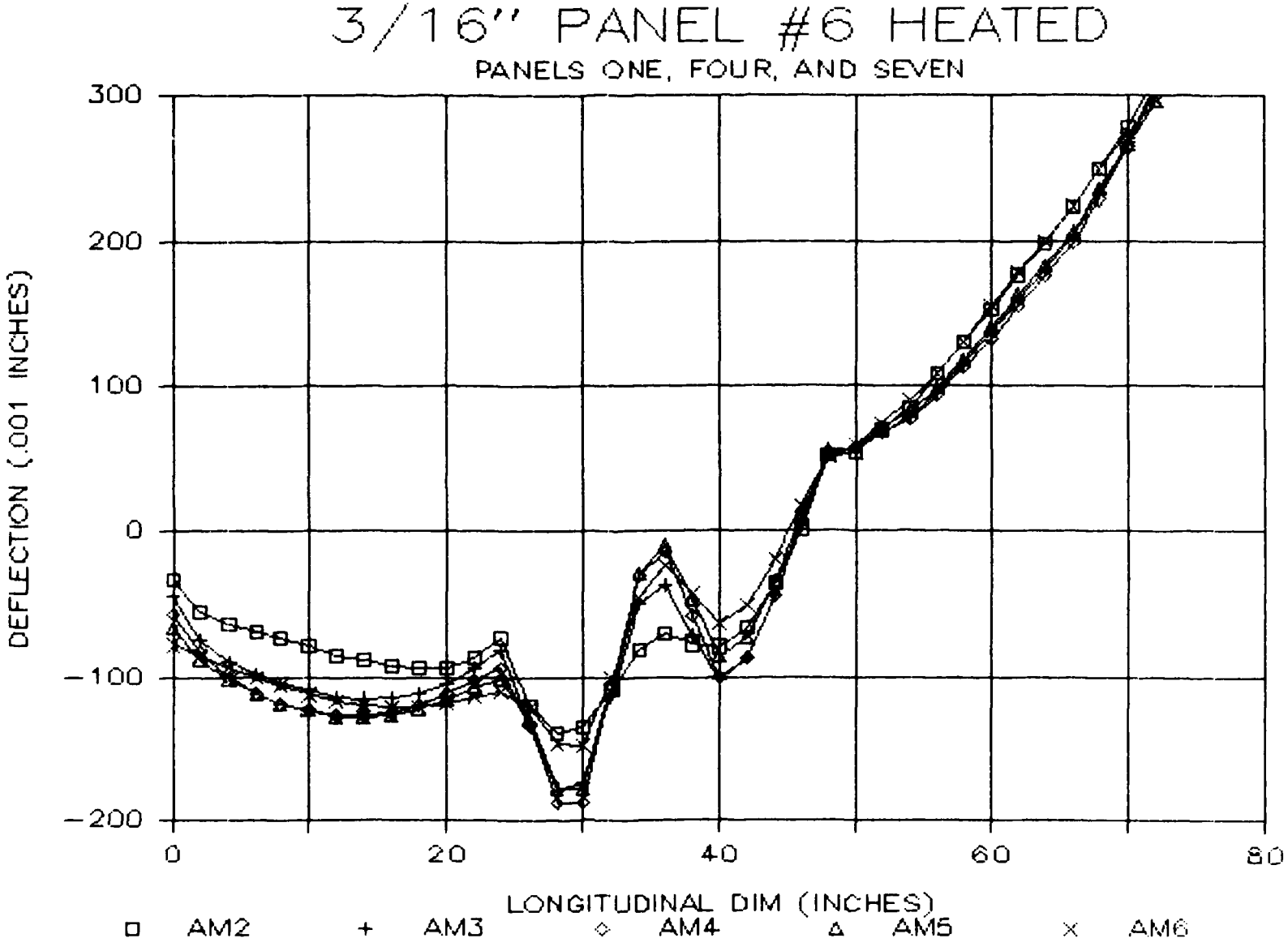

3/16" PLATE DEFLECTION
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
AM2
AM3
AM4
AM5
AM6


3/16" PANEL #5 HEATED
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
AM2
AM3
AM4
AM5
AM6


3/16" PANEL #4 HEATED
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
AM2
AM3
AM4
AM5
AM6


3/16" PANEL #2 HEATED
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
AM2
AM3
AM4
AM5
AM6

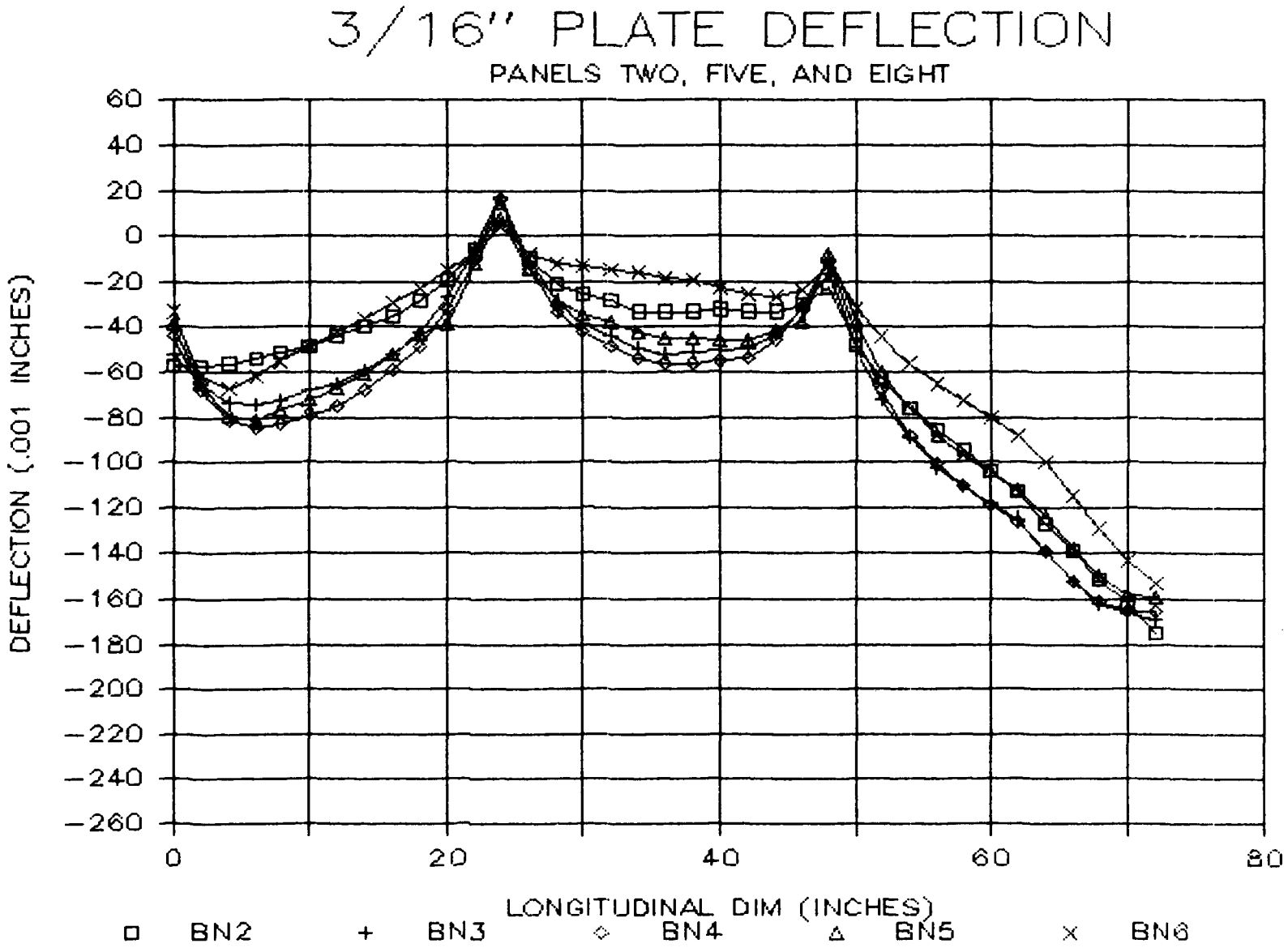

3/16" PANEL #8 HEATED
PANELS ONE, FOUR, AND SEVEN
DEFLECTION (.001 INCHES)
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
AM2
AM3
AM4
AM5
AM6

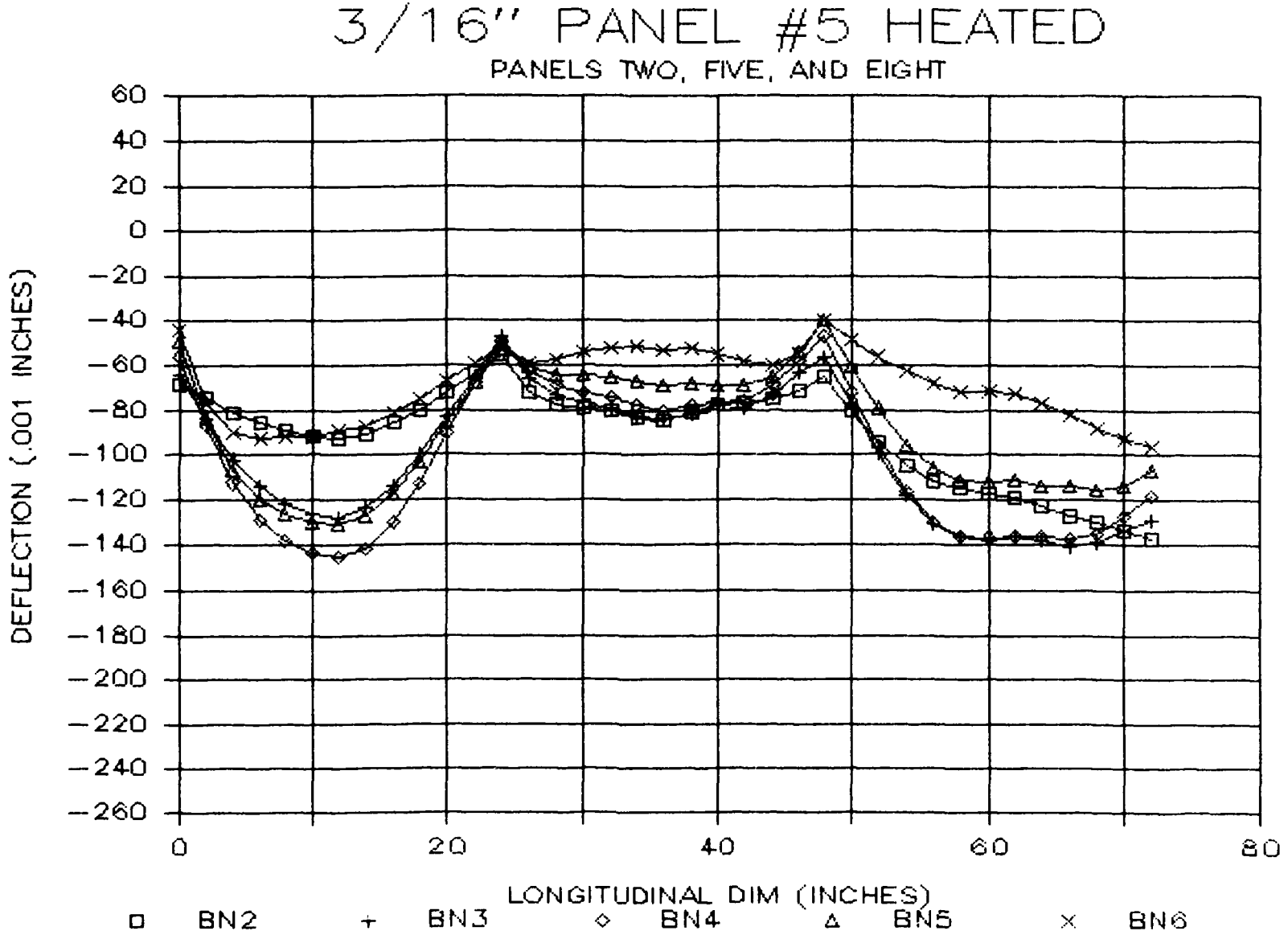

3/16" PANEL #6 HEATED
PANELS ONE, FOUR, AND SEVEN
300
200
100
0
-100
-200
DEFLECTION (.001 INCHES)
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
AM2
AM3
AM4
AM5
AM6

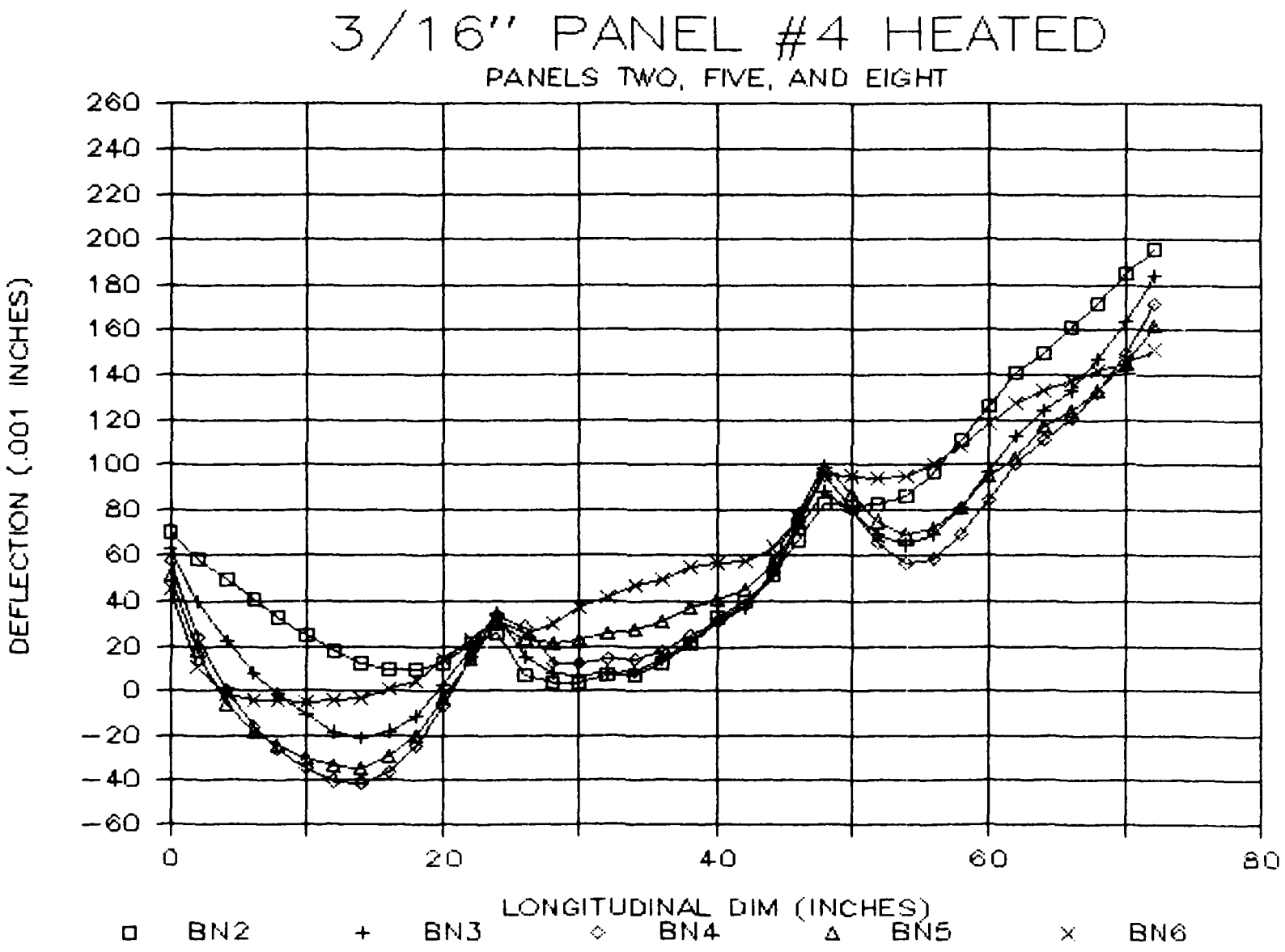
APPENDIX T

GRAPHS OF THE 3/16" STIFFENED PLATE LONGITUDINAL OUT-OF-PLANE DEFLECTION READINGS FOR LINES BN2 THROUGH BN6

The horizontal coordinate is the longitudinal displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

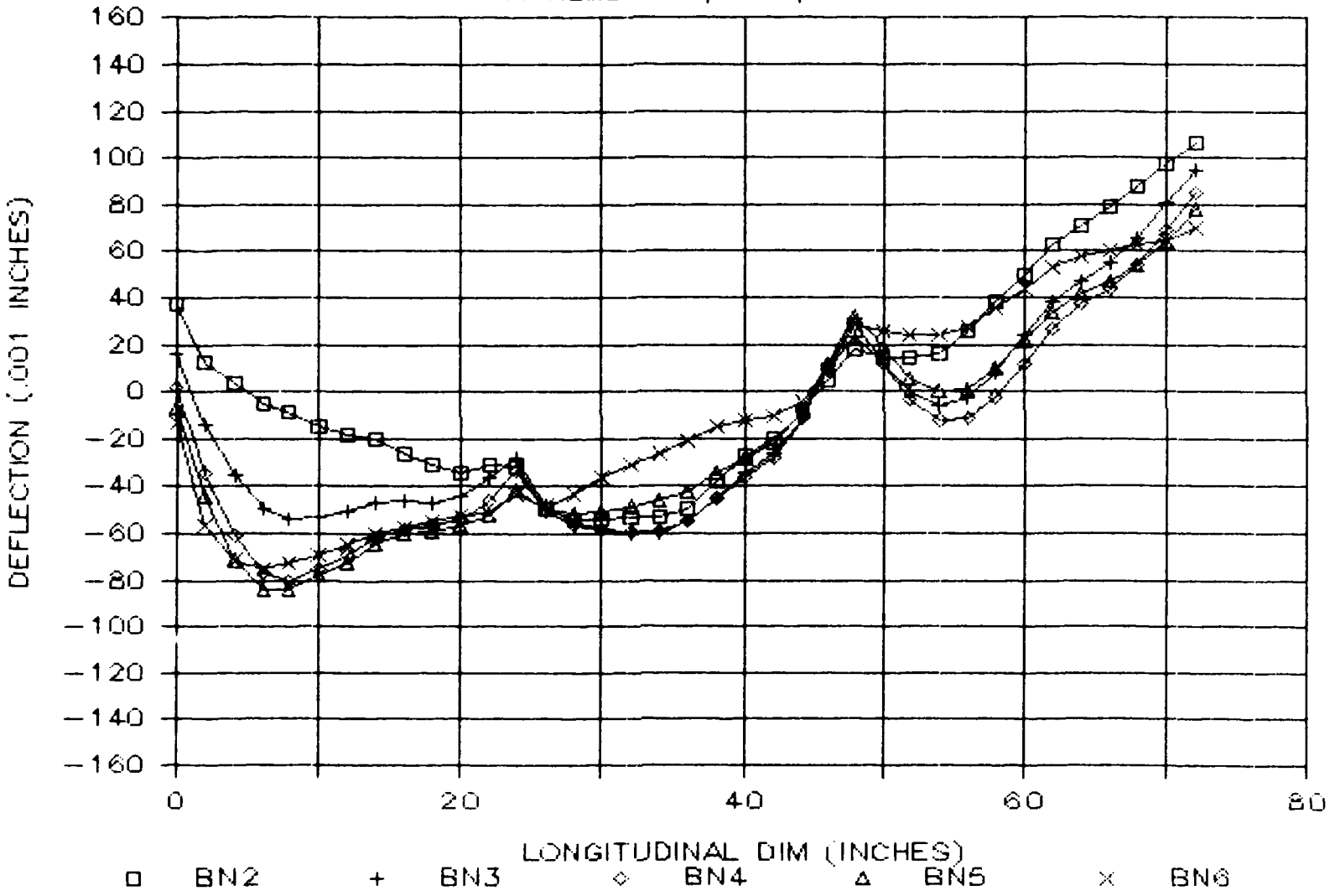

3/16" PLATE DEFLECTION
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
BN2
BN3
BN4
BN5
BN6

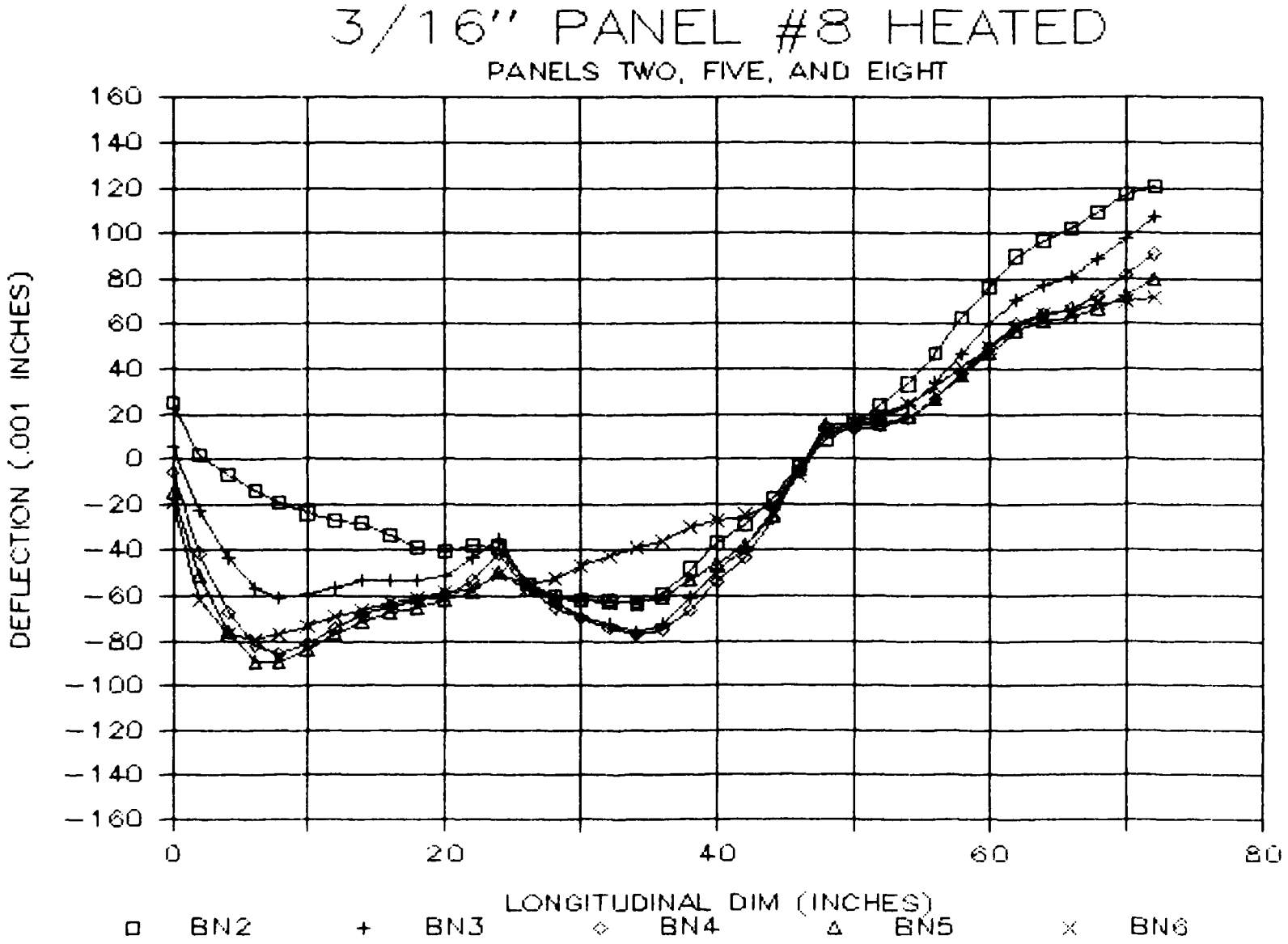

3/16" PANEL #5 HEATED
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
BN2
BN3
BN4
BN5
BN6

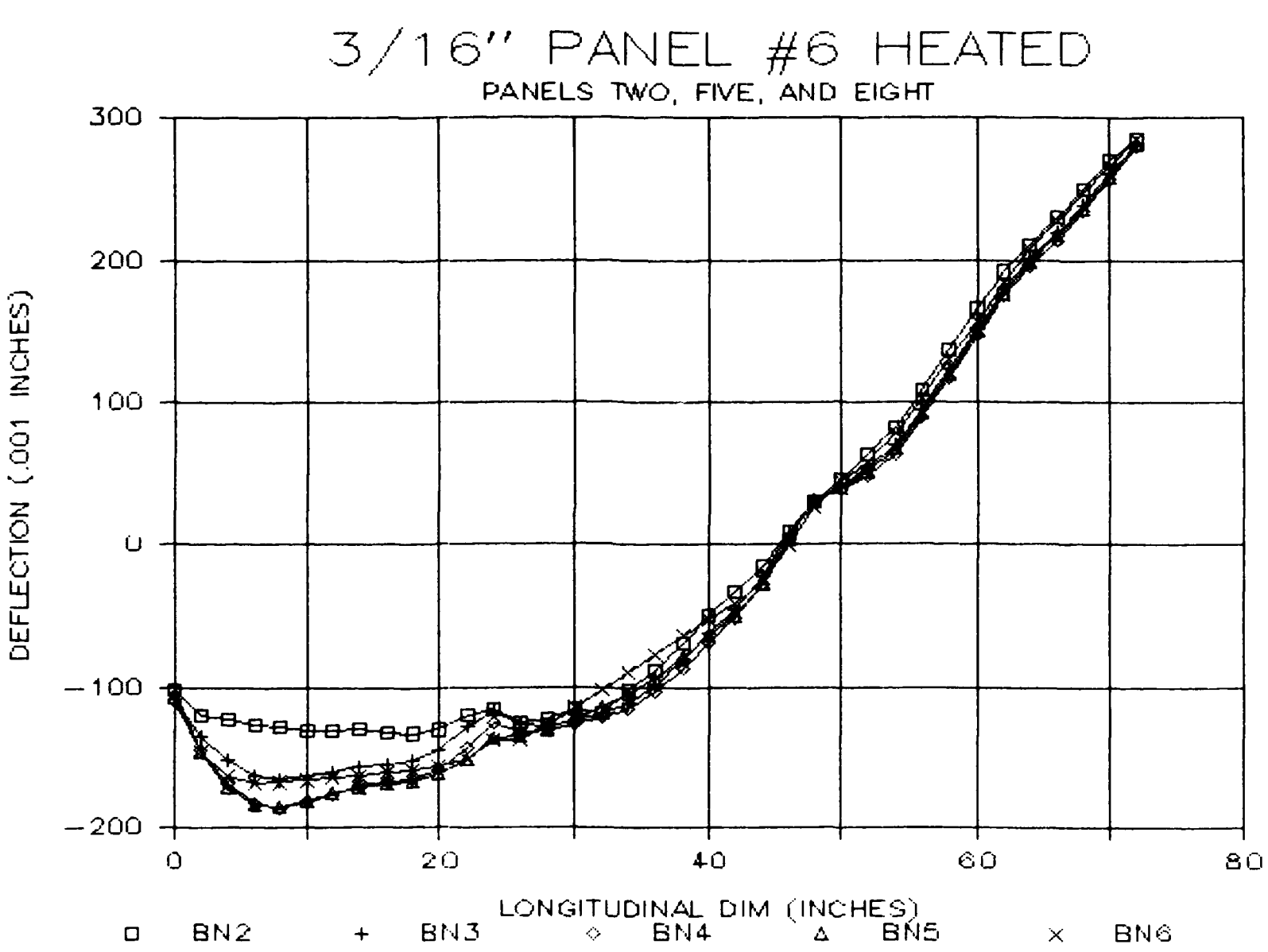

3/16" PANEL #4 HEATED
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
BN2
BN3
BN4
BN5
BN6

3/16" PANEL #2 HEATED

PANELS TWO, FIVE, AND EIGHT



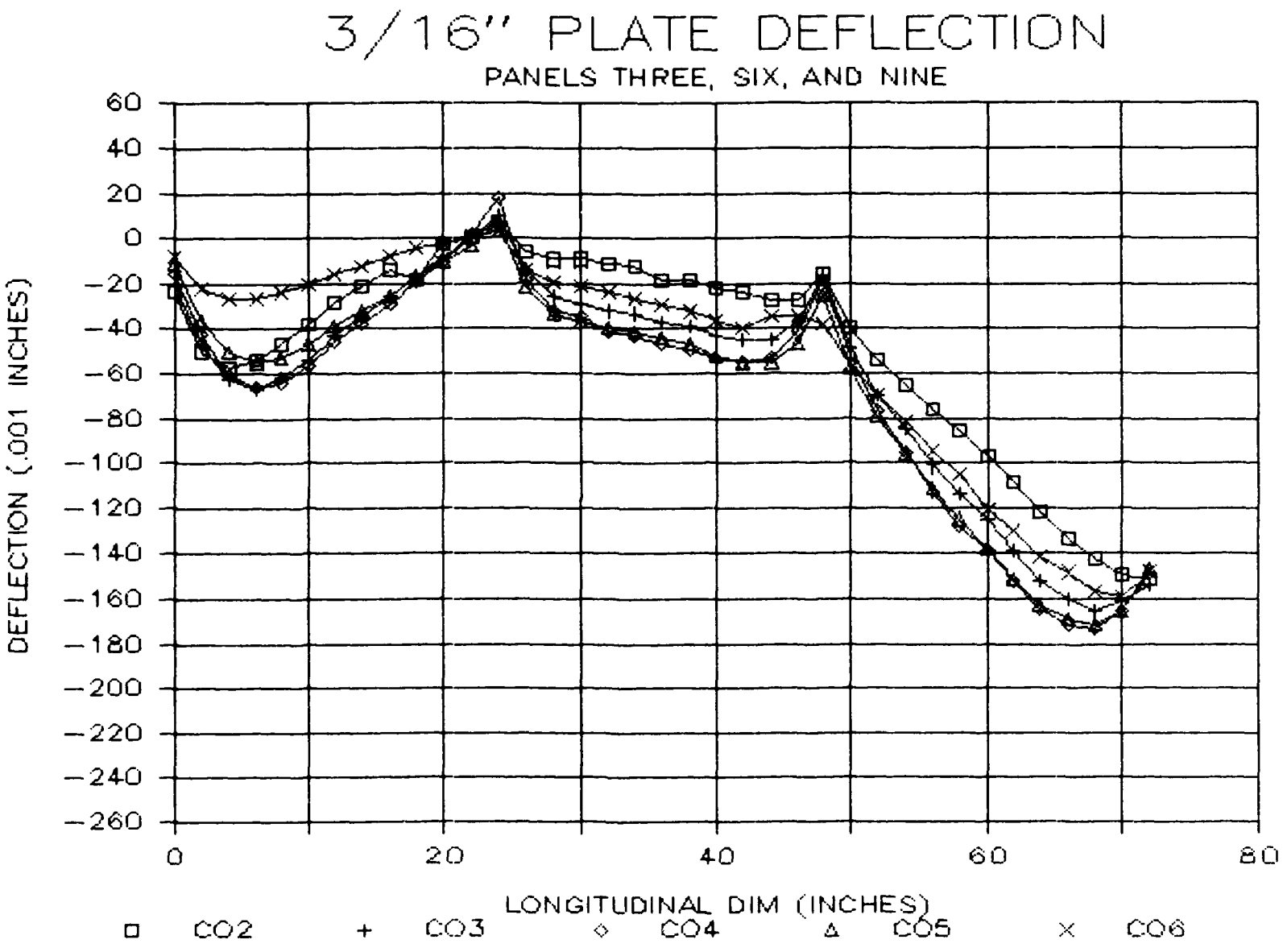

3/16" PANEL #8 HEATED
PANELS TWO, FIVE, AND EIGHT
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
BN2
BN3
BN4
BN5
BN6

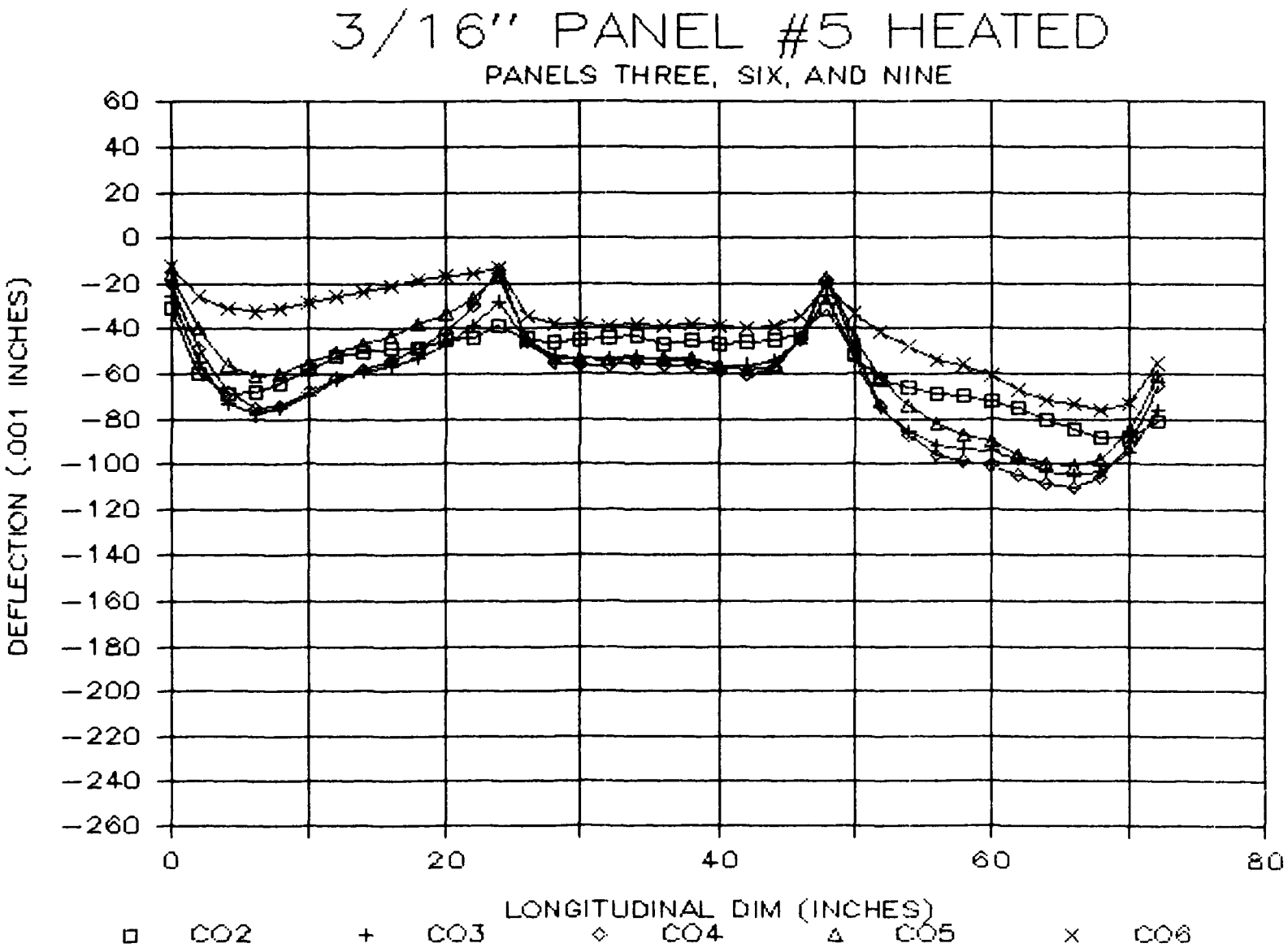

3/16" PANEL #6 HEATED
PANELS TWO, FIVE, AND EIGHT
300
200
100
0
-100
-200
DEFLECTION (.001 INCHES)
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
BN2
BN3
BN4
BN5
BN6

APPENDIX U

GRAPHS OF THE 3/16" STIFFENED PLATE LONGITUDINAL OUT-OF-PLANE DEFLECTION READINGS FOR LINES C02 THROUGH C06

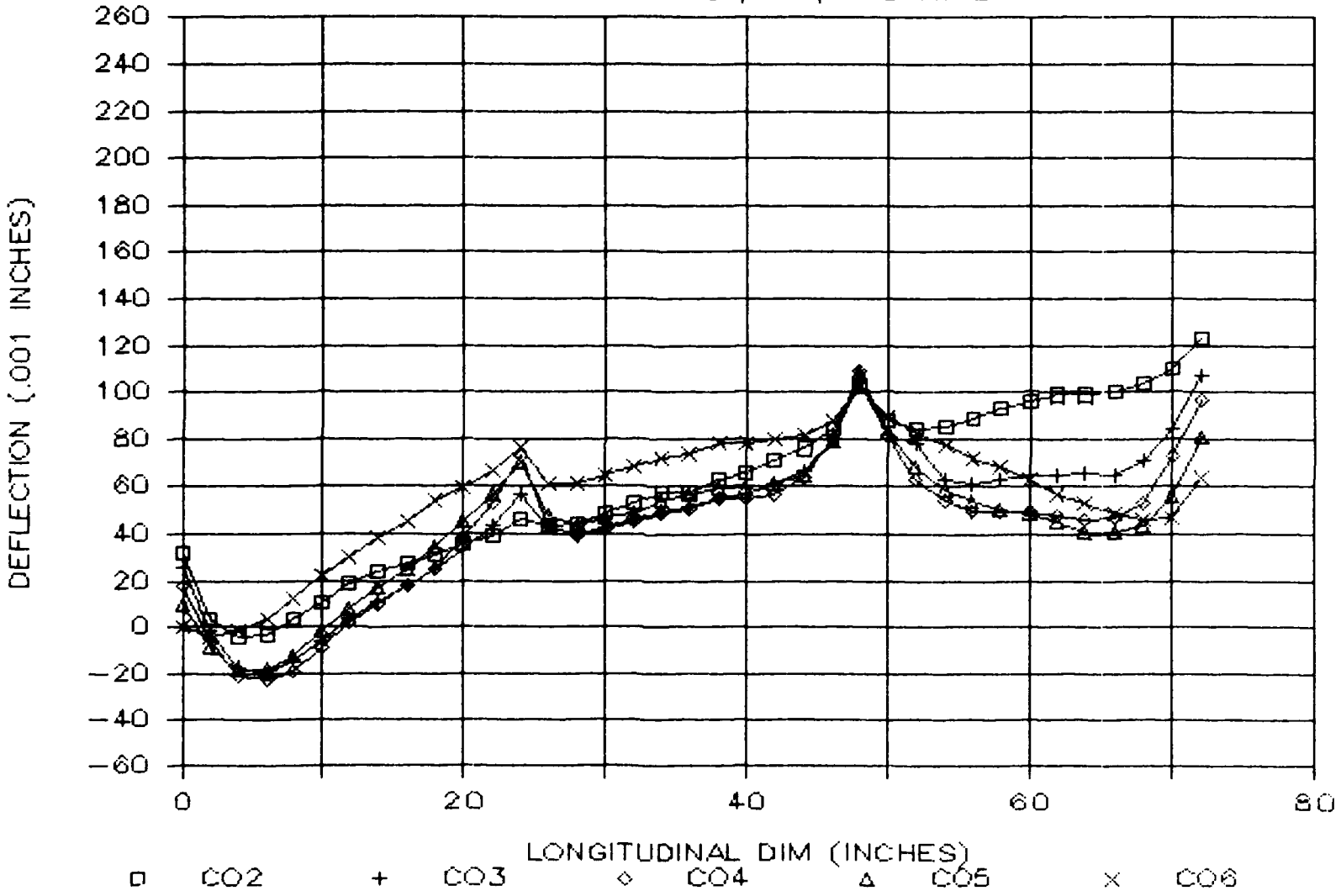
The horizontal coordinate is the longitudinal displacement, measured in inches, and the vertical coordinate is out-of-plane deflection, measured in thousandths of an inch.

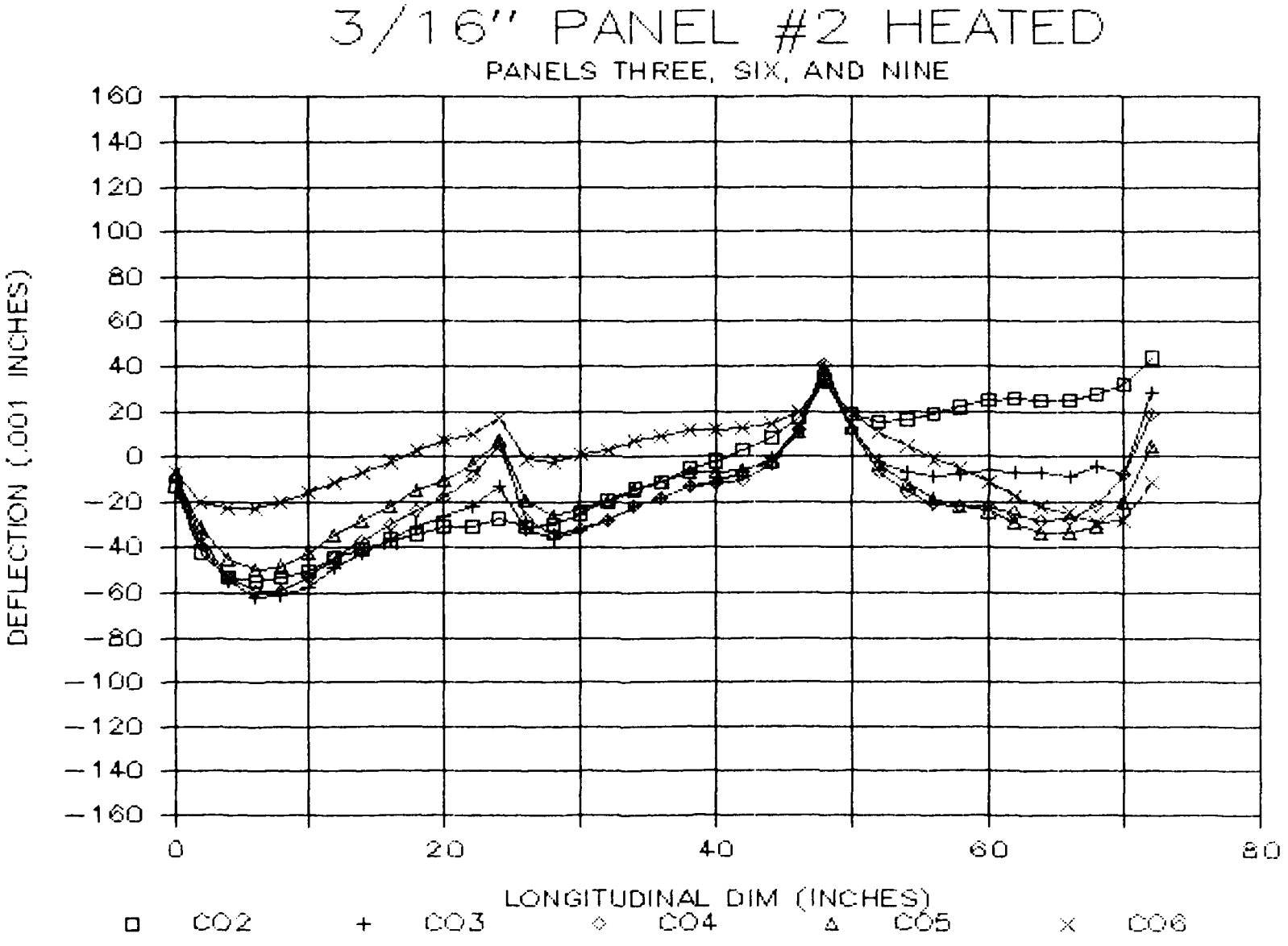

3/16" PLATE DEFLECTION
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
CO2
CO3
CO4
CO5
CO6

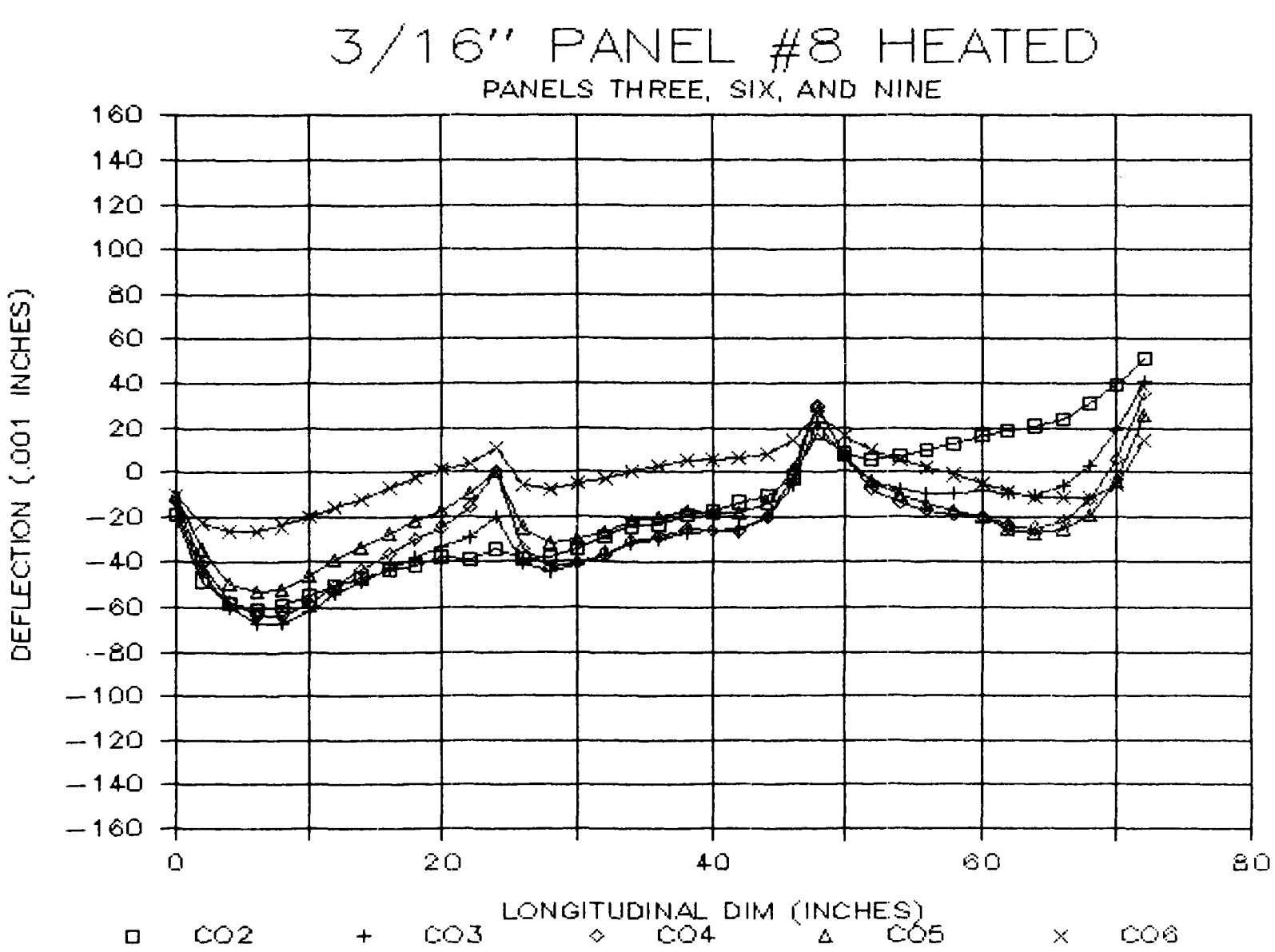

3/16" PANEL #5 HEATED
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
CO2
CO3
CO4
CO5
CO6

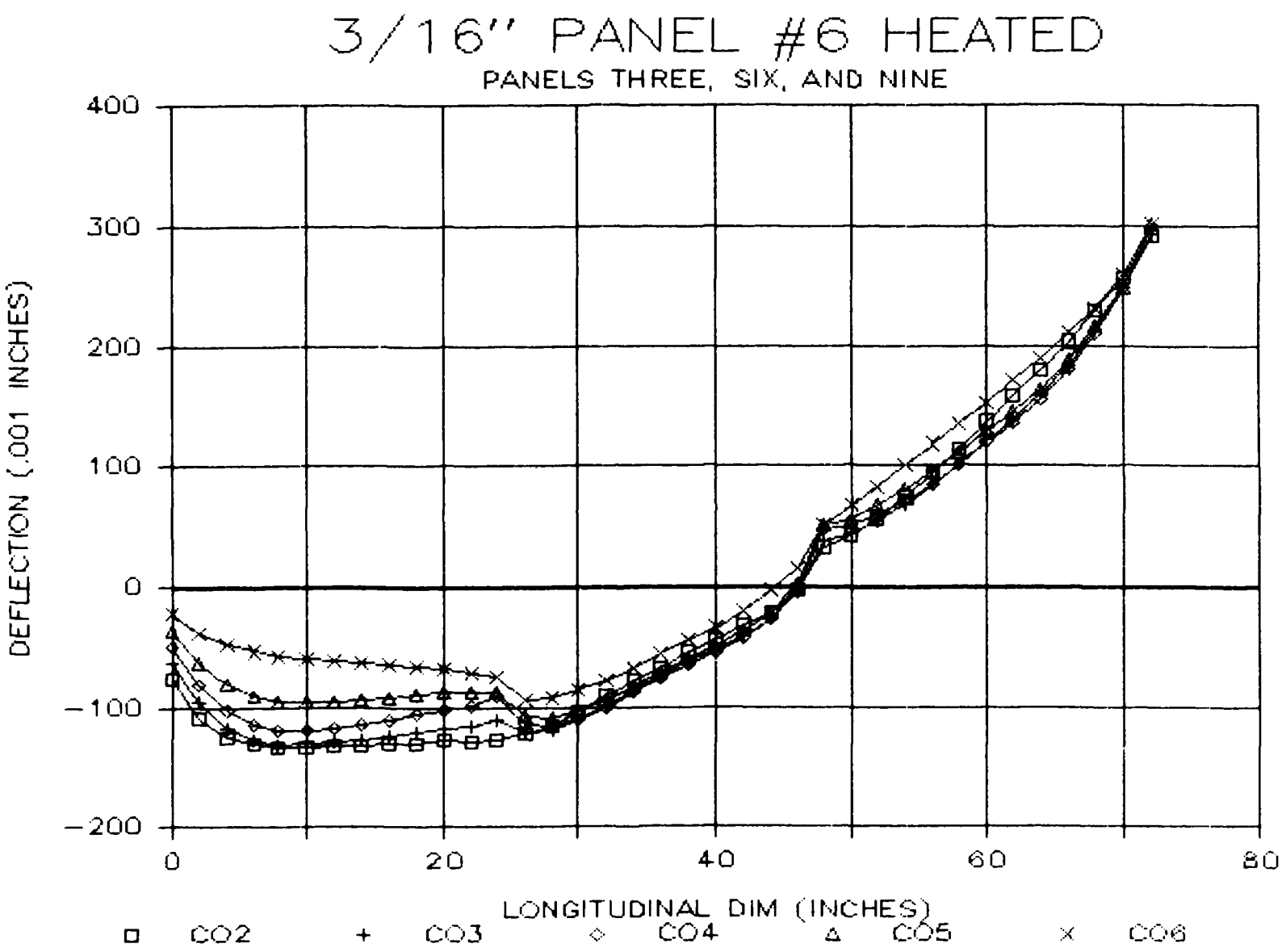
3/16" PANEL #4 HEATED

PANELS THREE, SIX, AND NINE




3/16" PANEL #2 HEATED
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
CO2
CO3
CO4
CO5
CO6


3/16" PANEL #8 HEATED
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
CO2
CO3
CO4
CO5
CO6


3/16" PANEL #6 HEATED
PANELS THREE, SIX, AND NINE
DEFLECTION (.001 INCHES)
400
300
200
100
0
-100
-200
0
20
40
60
80
LONGITUDINAL DIM (INCHES)
CO2
CO3
CO4
CO5
CO6

APPENDIX V

3/16" STIFFENED PLATE MID-PANEL DEFLECTION DATA D(MAX)iT AND D(MAX)iL

This appendix contains the mid-panel deflection data, D(MAX)iT and D(MAX)iL, for the 3/16" stiffened plate. The data is in tabular form. All deflection readings are in thousandths of an inch. See Figure 3-2 for the definition of D(MAX)iT and D(MAX)iL.

3/16" PLATE

Out of plane deflection at the center of panel i. referenced to the transverse straight line connecting the mid points of that panel's longitudinal stiffeners. See Figure 3-2 for the Definition of D(MAX)iT.

	PANEL HEATED*	D(MAX)1T	D(MAX)2T	D(MAX)3T	D(MAX)4T	D(MAX)5T	D(MAX)6T	D(MAX)7T	D(MAX)8T	D(MAX)9T
F	WELD	63.5	63.5	55	58.5	63	53.5	60.5	51.5	70.5
I	#5	71.75	96.75	52	46.25	33.25	42	64	74.5	74
R	#4	68	88.5	51.5	-56	36.5	43.75	63	69	68
S	#2	55	62.5	42.5	-55.25	47	46.5	62.5	65	66
T	#8	55	60.5	43.75	-56	58.5	40	49.5	23.5	67
	#6	54	63	47	-51	46.5	38.5	49	25.5	61.5
P	#1	39.5	55	47.5	-54	49.5	38.5	48	23.75	60.75
A	#7	40.5	55	47	-55.75	47.75	37.75	26	24.5	61.75
S	#3	41.5	53	25.5	-54.5	50.75	37	26.5	19.25	63.5
S	#9	40.5	53.5	26	-53	51.5	37	25	18.5	33.75
S										
E	#5	41	59	24.5	-63.5	33.25	31.25	26	21	35
C	#6	41.5	59.5	24	-63.25	38	6	26	19.5	35.25
O	#2	39	20	18.5	-64.5	37.75	6.25	27	21	35.5
N	#8	38.5	20.5	19	-65	39	6.75	27	-3.5	33
D	#1	-2	17	19.5	-66.25	38.75	6.5	27.5	-1.5	33.5
	#3	-2.25	20.25	-8	-65.5	39	5.75	27	-3	33
P	#7	-2	20	-7	-66	40.5	6.5	7.5	-3	32.75
A	#9	-2	19.5	-8	-65.5	39.5	5.5	7.5	-5.5	-10.5
S										
S										

3/16" PLATE

Out of plane deflection at the center of panel i, referenced to the longitudinal straight line connecting the mid points of that panel's transverse stiffeners. See Figure 3-2 for the definition of D(MAX)iL.

	PANEL HEATED*	D(MAX)1L	D(MAX)2L	D(MAX)3L	D(MAX)4L	D(MAX)5L	D(MAX)6L	D(MAX)7L	D(MAX)8L	D(MAX)9L
F	WELD	56	61	47	70.5	58.5	47	54	31	56
I	#5	62.5	93	45	66	32.5	40.5	56	54	59.5
R	#4	62	85.75	43.5	-6	46.5	40	57.5	49.5	53
S	#2	54	53.5	42.5	-6.5	52.75	41.5	58	44.75	52
T	#8	54.75	51	43.5	-8.75	61.25	43.5	48	2.25	53
	#6	52.5	58.5	46.5	-6	56.25	53	48	8.75	54.5
P	#1	50.75	55.25	49.5	-16.25	62.25	55.75	46.5	7.25	52.5
A	#7	51	55.5	49	-14.5	62	55.25	31.5	9	52.5
S	#3	51.5	55.25	35	-12.75	64.5	53	32.25	10	54.5
S	#9	51	57	35	-11.5	66	51.75	32	9	31.75
S										
E	#5	52	61.75	33.5	-19	50.25	46.75	33.5	10.75	34.5
C	#6	52.5	62	32	-19	55	23.5	33.75	11	34
O	#2	51	22.5	28	-19.5	55.5	24	34	10.5	33.5
N	#8	51	23	27.75	-21	55.5	24	34	-13.5	31.75
D	#1	10.5	20	28.5	-22	55.5	24	34.5	-11.5	31.5
	#3	10	23	2	-21	56	22.5	34.5	-13	31.5
P	#7	9.25	22.5	2.25	-22.5	56.5	22.5	15	-13	31.25
A	#9	10.5	23	2	-20.5	56.5	22.5	14	-16.5	-11.35
S										
S										

APPENDIX W

1/8" STIFFENED PLATE MID-PANEL DEFLECTION DATA D(MAX)iT AND D(MAX)iL

This appendix contains the mid-panel deflection data, D(MAX)iT and D(MAX)iL, for the 1/8" stiffened plate. The data is in tabular form. All deflection readings are in thousandths of an inch. See Figure 3-2 for the definition of D(MAX)iT and D(MAX)iL.

1/8" PLATE

Out of plane deflection at the center of panel i, referenced to the transverse straight line connecting the mid points of that panel's longitudinal stiffeners. See Figure 3-2 for the definition of D MAX /iT.

	PANEL HEATED*	D MAX /1T	D MAX /2T	D MAX /3T	D MAX /4T	D MAX /5T	D MAX /6T	D MAX /7T	D MAX /8T	D MAX /9T
F	WELD	69.5	7.5	32.5	34.25	69.75	27.5	85	17	49.5
I	#5	75.5	4	37	24	24.5	13	93.5	16	53.5
R	#4	93	4.5	34	20.5	25	12	95.5	16	54.5
S	#6	94	4	39.5	20	26.5	13	96	15	56
T	#2	96.5	-5.5	43.5	20	28.75	14.25	95.25	15.75	55.25
	#8	96	-6.5	43	20.5	28.5	13.5	89	-12	54.5
P	#3	93.5	-8	-6	19.75	32.25	11	88	-12	54
A	#1	126.5	-17.5	-6.5	14.75	40.75	7.5	90	-13	51.5
S	#7	127.5	-18	-7	16.5	47.75	9.5	123	-26.5	55
S	#9	127.5	-18	-5.5	16.25	52.5	4.5	122	-32.5	40
S										
E	#5	129.5	-20	-6.5	20.25	-52	-4	PLATE	WAS	DAMAGED
C	@@@@									
O	AFTER									
N	DAMAGE									
D	#5	130.75	-19	-10.5	17.5	-52	-3	124.25	-16.5	-73.5
	#4	129.25	-20.5	-9	-10.25	-46.5	-4.25	123	-15.25	-73.75
P	#1	108	-20.5	-9	-9.5	-50	-2.5	124	-16	-74.5
A	#7	108	-19.5	-9.25	-9.5	-52.5	-3	114	-15.5	-74.5
S										
S										
3										
R										
D										
	#1	67.25	-23	-8.5	-9.5	-55.5	-1.25	113.75	-15.75	-74
P	#7	67.25	-23	-8	-8	-58	-1.75	93.5	-13	-74.5
A										
S										
S										
4										
T										
H										
	#7				-8.5	-59		67.75	-11.75	
P	#1	24.5	-23		-8.75	-59.5				
A										
S										
S										

@@@@ THE PLATE WAS DAMAGED WHILE TAKING OUT-OF-PLANE DISTORTION READINGS AFTER PANEL #5 WAS HEATED. PANELS #9 AND #4 WERE AFFECTED

1/8" PLATE

Out of plane deflection at the center of panel i, referenced to the longitudinal straight line connecting the mid points of that panel's transverse stiffeners. See Figure 3-2 for the definition of D MAX iL.

	PANEL HEATED#	D(MAX)1L	D(MAX)2L	D(MAX)3L	D(MAX)4L	D(MAX)5L	D(MAX)6L	D(MAX)7L	D(MAX)8L	D(MAX)9L
F	WELD	48.75	-14	16	14.5	45.5	12.5	68.5	-8.5	37
I	#5	55	-17	21	6	2.5	0	77.5	-10	41
R	#4	74.75	-16.5	18.75	6.25	4	0.5	78.75	-10.5	42
S	#6	76	-17.5	24.5	6.5	6.25	3.5	78.5	-10.75	45
T	#2	78	-27	28.25	6.5	8	3.75	79.25	-10	43.75
	#8	79.25	-26.75	28.25	6.25	8.25	3.25	73	-37.5	43
P	#3	76.5	-27.75	-18.25	6	12.5	0.75	71.75	-38	42.75
A	#1	118.5	-35.5	-19.25	0	21	3	74.5	-38.5	40.75
S	#7	119.5	-35.75	-19	0.25	28.75	-2	113.75	-49.5	43.5
S	#9	120	-35.25	-18	-0.25	34	-7.5	113.75	-54	32.25
S										
E	#5	121.5	-38.5	-18.5	3.5	-71.5	-16	PLATE	WAS	DAMAGED
C	@@@@									
O	AFTER									
N	DAMAGE									
D	#5	122.5	-37	-22.75	1.75	-71	-14.75	115.25	-38.5	-82
	#4	121	-38.5	-21.5	-25	-65.5	-17	114	-37.5	-83.5
P	#1	101.5	-37.5	-22.25	-24	-68.75	-15.25	114.5	-38.25	-84
A	#7	100.25	-37	-22	-24.25	-71	-15	105	-37	-83.25
S										
S										
3										
R										
D										
	#1	60.75	-40	-21	-24	-74.25	-14	105	-37.5	-83.25
P	#7	59.75	-40.5	-21	-22	-76	-13.75	85.5	-33.5	-82.75
A										
S										
S										
4										
T										
H										
	#7				-23.5	-77.25		59.5	-33.25	
P	#1	18	-39		-23.5	-77				
A										
S										
S										

@@@@ THE PLATE WAS DAMAGED WHILE TAKING OUT-OF-PLANE DISTORTION READINGS AFTER PANEL #5 WAS HEATED. PANELS #9 AND #4 WERE AFFECTED

APPENDIX X

AFFECT ON D(MAX)iT AND D(MAX)iL OF LINE HEATING EACH PANEL ON THE 3/16" STIFFENED PLATE

There are two types of comparisons made in this appendix:

1. the affect on D(MAX)iT and D(MAX)iL of line heating each of the panels, and
2. the affect on D(MAX) of all other panels when line heating just one panel.

All data in the tables are in thousandths on an inch.

A. 3/16" STIFFENED PLATE. FIRST PASS

PANEL #1

1. The affect on D(MAX)1T and D(MAX)1L of line heating all other panels.

TRANSVERSE

-14.5	-13	1
-3.75	8.25	-1
1	0	-1

LONGITUDINAL

-1.75	-8	0.5
-0.5	6.5	-2.25
0.25	0.75	-0.5

2. The affect on D(MAX) of all other panels by heating panel #1

TRANSVERSE

-14.5	-8	0.5
-3	3	0
-1	0	-0.75

LONGITUDINAL

-1.75	-3.25	3
-10.3	6	2.75
-1.5	-1.5	-2

PANEL #2

1. The affect on D(MAX)2T and D(MAX)2L of line heating all other panels.

TRANSVERSE

-8	-26	-2
-8.25	33.3	2.5
0	-2	0.5

LONGITUDINAL

-3.25	-32.3	-0.25
-7.25	32	7.5
0.25	-2.5	1.75

2. The affect on D(MAX) of all other panels by heating panel #2

TRANSVERSE

-13	-26	-9
0.75	10.5	2.75
-0.5	-4	-2

LONGITUDINAL

-8	-32.3	-1
-0.5	6.25	1.5
0.5	-4.75	-1

PANEL #3

1. The affect on D(MAX)3T and D(MAX)3L of line heating all other panels.

TRANSVERSE

0.5	-9	-21.5
-0.5	-3	3.25
-0.5	1.25	0.5

LONGITUDINAL

3	-1	-14
-1.5	-2	3
-0.5	1	0

2. The affect on D(MAX) of all other panels by heating panel #3

TRANSVERSE

1	-2	-21.5
1.25	3	-0.75
0.5	0.75	1.75

LONGITUDINAL

0.5	-0.25	-14
1.75	2.5	-2.25
0.75	1	2

PANEL #4

1. The affect on D(MAX)4T and D(MAX)4L of line heating all other panels.

TRANSVERSE

-3	0.75	1.25
-102	-12.3	5
-1.75	-0.75	1.5

LONGITUDINAL

-10.3	-0.5	1.75
-72	-4.5	2.75
1.75	-2.25	1.25

2. The affect on D(MAX) of all other panels by heating panel #4

TRANSVERSE

-3.75	-8.25	-0.5
-102	3.25	1.75
-1	-5.5	-6

LONGITUDINAL

-0.5	-7.25	-1.5
-72	14	-0.5
1.5	-4.5	-6.25

PANEL #5

1. The affect on D(MAX)5T and D(MAX)5L of line heating all other panels.

TRANSVERSE

3	10.5	3
3.25	-29.8	-12
-1.75	11.5	0.75

LONGITUDINAL

6	6.25	2.5
14	-26	-5
-0.25	8.5	1.5

2. The affect on D(MAX) of all other panels by heating panel #5

TRANSVERSE

8.25	33.25	-3
-12.3	-29.8	-11.5
3.5	23	3.5

LONGITUDINAL

6.5	32	-2
-4.5	-26	-6.5
2	23	3.25

PANEL #6

1. The affect on D(MAX)6T and D(MAX)6L of line heating all other panels.

TRANSVERSE

0	2.75	-0.75
1.75	-11.5	-1.5
-0.75	-6.5	0

LONGITUDINAL

2.75	1.5	-2.25
-0.5	-6.5	9.5
-0.5	2	-1.25

2. The affect on D(MAX) of all other panels by heating panel #6

TRANSVERSE

-1	2.5	3.25
5	-12	-1.5
-0.5	2	-5.5

LONGITUDINAL

-2.25	7.5	3
2.75	-5	9.5
0	6.5	1.5

PANEL #7

1. The affect on D(MAX)7T and D(MAX)7L of line heating all other panels.

TRANSVERSE

-1	-0.5	0.5
-1	3.5	-0.5
-22	-13	-1.5

LONGITUDINAL

-1.5	0.5	0.75
1.5	2	0
-15	-10	-0.25

2. The affect on D(MAX) of all other panels by heating panel #7

TRANSVERSE

1	0	-0.5
-1.75	-1.75	-0.75
-22	-1.75	1

LONGITUDINAL

0.25	0.25	-0.5
1.75	-0.25	-0.5
-15	1.75	0

PANEL #8

1. The affect on D(MAX)8T and D(MAX)8L of line heating all other panels.

TRANSVERSE

0	-4	0.75
-5.5	23	2
-1.75	-41.5	-5.25

LONGITUDINAL

-1.5	-4.75	1
-4.5	23	6.5
1.75	-42.5	-1

2. The affect on D(MAX) of all other panels by heating panel #8

TRANSVERSE

0	-2	1.25
-0.75	11.5	-6.5
-13	-41.5	1

LONGITUDINAL

0.75	-2.5	1
-2.25	8.5	2
-10	-42.5	1

PANEL #9

1. The affect on D(MAX)9T and D(MAX)9L of line heating all other panels.

TRANSVERSE		
-0.75	-2	1.75
-6	3.5	-5.5
1	1	-29.8

LONGITUDINAL		
-2	-1	2
-6.25	3.25	1.5
0	1	-22.8

2. The affect on D(MAX) of all other panels by heating panel #9

TRANSVERSE		
-1	0.5	0.5
1.5	0.75	0
-1.5	-5.25	-29.8

LONGITUDINAL		
-0.5	1.75	0
1.25	1.5	-1.25
-0.25	-1	-22.8

B. 3/16" STIFFENED PLATE. SECOND PASS

PANEL #1

1. The affect on D(MAX)1T and D(MAX)1L of line heating all other panels.

TRANSVERSE

-40.5	-2.5	0.25
N/A	-0.5	0.5
-0.25	-0.5	0

LONGITUDINAL

-40.5	-1.5	-0.5
N/A	0.5	0.5
-0.75	0	1.25

2. The affect on D(MAX) of all other panels by heating panel #1

TRANSVERSE

-40.5	-3.5	0.5
-1.25	-0.25	-0.25
0.5	2	0.5

LONGITUDINAL

-40.5	-3	0.75
-1	0	0
0.5	2	-0.25

PANEL #2

1. The affect on D(MAX)2T and D(MAX)2L of line heating all other panels.

TRANSVERSE

-3.5	-39.5	3.25
N/A	6	0.5
-0.25	0.5	-0.5

LONGITUDINAL

-3	-39.5	3
N/A	5.75	0.25
-0.5	0.5	0.5

2. The affect on D(MAX) of all other panels by heating panel #2

TRANSVERSE

-2.5	-39.5	-5.5
-1.25	-0.25	0.25
1	1.5	0.25

LONGITUDINAL

-1.5	-39.5	-4
-0.5	0.5	0.5
0.25	-0.5	-0.5

PANEL #3

1. The affect on D(MAX)3T and D(MAX)3L of line heating all other panels.

TRANSVERSE

0.5	-5.5	-27.5
N/A	-2.5	-0.5
1	0.5	-1

LONGITUDINAL

0.75	-4	-26.5
N/A	-2.5	-1.5
0.25	-0.25	-0.25

2. The affect on D(MAX) of all other panels by heating panel #3

TRANSVERSE

-0.25	3.25	-27.5
0.75	0.25	-0.75
-0.5	-1.5	0.5

LONGITUDINAL

-0.5	3	-26.5
1	0.5	-1.5
0	-1.5	0

PANEL #4

1. The affect on D(M4X)4T and D(M4L of of line heating all other panels.

TRANSVERSE

-1.25	-1.25	0.75
N/A	-8	0.25
-0.5	-0.5	0.5

LONGITUDINAL

-1	-0.5	1
N/A	-5.5	0
-1.5	-1.5	2

2. The affect on D(MAX) of all other panels by heating panel #4

TRANSVERSE

LONGITUDINAL

PANEL #5

1. The affect on D(MAX)5T and D(MAX)5L of line heating all other panels.

TRANSVERSE

-0.25	-0.25	0.25
N/A	-18.3	4.75
1.5	1.25	-1

LONGITUDINAL

0	0.5	0.5
N/A	-15.8	4.75
0.5	0	0

2. The affect on D(MAX) of all other panels by heating panel #5

TRANSVERSE

-0.5	6	-2.5
-8	-18.3	-5.5
0.5	0.25	0.5

LONGITUDINAL

0.5	5.75	-2.5
-5.5	-15.8	-4
1.75	1.75	1.25

PANEL #6

1. The affect on D(MAX)6T and D(MAX)6L of line heating all other panels.

TRANSVERSE

-0.25	0.25	-0.75
N/A	-5.5	-25.5
0.75	0.5	-1

LONGITUDINAL

0	0.5	-1.5
N/A	-4	-23.3
0	0	0

2. The affect on D(MAX) of all other panels by heating panel #6

TRANSVERSE

0.5	0.5	-0.5
0.25	4.75	-25.3
0	-1.5	0.25

LONGITUDINAL

0.5	0.25	-1.5
0	4.75	-23.3
0.25	0.25	-0.5

PANEL #7

1. The affect on D(MAX)7T and D(MAX)7L of line heating all other panels.

TRANSVERSE

0.5	1	-0.5
N/A	0.5	0
-19.5	0	0

LONGITUDINAL

0.5	0.25	0
N/A	1.75	0.25
-19.5	0	-1

2. The affect on D(MAX) of all other panels by heating panel #7

TRANSVERSE

0.25	-0.25	1
-0.5	1.5	0.75
-19.5	0	-0.25

LONGITUDINAL

-0.75	-0.5	0.25
-1.5	0.5	0
-19.5	0	-0.25

PANEL #8

1. The affect on D(MAX)8T and D(MAX)8L of line heating all other panels.

TRANSVERSE

2	1.5	-1.5
N/A	2.5	-1.5
0	-24.5	-2.5

LONGITUDINAL

2	-0.5	-1.5
N/A	1.75	0.25
0	-24	-3.5

2. The affect on D(MAX) of all other panels by heating panel #8

TRANSVERSE

-0.5	0.5	0.5
-0.5	1.25	0.5
0	-24.5	-2.5

LONGITUDINAL

0	0.5	-0.25
-1.5	0	0
0	-24	-1.75

PANEL #9

1. The affect on D(MAX)9T and D(MAX)9L of line heating all other panels.

TRANSVERSE

0.5	0.25	-0.5
N/A	0.5	0.25
-0.25	-2.5	-43.3

LONGITUDINAL

-0.25	-0.5	0
N/A	1.25	-0.5
-0.25	-1.75	-42.6

2. The affect on D(MAX) of all other panels by heating panel #9

TRANSVERSE

0	-0.5	-1
0.5	-0.5	-1
0	-2.5	-43.8

LONGITUDINAL

1.25	0.5	-0.25
2	0	0
-1	-3.5	-42.6

APPENDIX Y

AFFECT ON D(MAX)iT AND D(MAX)iL OF LINE HEATING EACH PANEL ON THE 1/8" STIFFENED PLATE

There are two types of comparisons made in this appendix:

1. the affect on D(MAX)iT and D(MAX)iL of line heating each of the panels, and
2. the affect on D(MAX) of all other panels when line heating just one panel.

All data in the tables are in thousandths on an inch.

A. 1/8" STIFFENED PLATE. FIRST PASS

PANEL #1

1. The affect on D(MAX)1T and D(MAX)1L of line heating all other panels.

TRANSVERSE

33	2.5	-2.5
17.5	6	1
0	-0.5	0

LONGITUDINAL

42	2	-2.75
19.75	6.25	1.25
1	1.25	0.5

2. The affect on D(MAX) of all other panels by heating panel #1

TRANSVERSE

33	-9.5	-0.5
-5	8.5	-3.5
2	-1	-2.5

LONGITUDINAL

42	-7.75	-1
-6	8.5	2.25
2.75	-0.5	-2

PANEL #2

1. The affect on D(MAX)2T and D(MAX)2L of line heating all other panels.

TRANSVERSE

-9.5	9.5	-1.5
0.5	-3.5	-0.5
-0.5	-1	0

LONGITUDINAL

-7.75	-9.5	-1
0.5	-3	-1
-0.25	0.25	0.5

2. The affect on D(MAX) of all other panels by heating panel #2

TRANSVERSE

2.5	-9.5	4
0	2.25	1.25
-0.75	0.75	-0.75

LONGITUDINAL

2	-9.5	3.75
0	1.75	0.25
0.75	0.75	-1.25

PANEL #3

1. The affect on D(MAX)3T and D(MAX)3L of line heating all other panels.

TRANSVERSE

-0.5	4	-49
-3	4.5	5.5
-0.5	-0.5	1.5

LONGITUDINAL

-1	3.75	-46.5
-2.25	5	5.75
0.25	0	1

2. The affect on D(MAX) of all other panels by heating panel #3

TRANSVERSE

-2.5	-1.5	-49
-0.75	3.75	-2.5
-1	0	-0.5

LONGITUDINAL

-2.75	-1	-46.5
-0.25	4.25	-2.5
-1.25	-0.5	-0.25

PANEL #4

1. The affect on D(MAX)4T and D(MAX)4L of line heating all other panels.

TRANSVERSE

-5	0	-0.75
-3.5	-10.3	-0.5
1.75	0.5	-0.25

LONGITUDINAL

-6	0	-0.25
0.25	-8.5	0.25
0.25	-0.25	-0.5

2. The affect on D(MAX) of all other panels by heating panel #4

TRANSVERSE

18.5	0.5	-3
-3.5	0.5	-1
2	0	1

LONGITUDINAL

19.75	0.5	-2.25
0.25	1.5	0.5
1.25	-0.5	1

PANEL #5

1. The affect on D(MAX)5T and D(MAX)5L of line heating all other panels.

TRANSVERSE

8.5	2.25	3.75
0.5	-45.3	1.5
7	-0.25	4.75

LONGITUDINAL

8.5	1.75	4.25
1.5	-43	2.25
7.75	0.25	5.25

2. The affect on D(MAX) of all other panels by heating panel #5

TRANSVERSE

6	-3.5	4.5
-10.3	-45.3	-14.5
8.5	-1	4

LONGITUDINAL

6.25	-3	5
-8.5	-43	-12.5
9	-1.5	4

PANEL #6

1. The affect on D(M6X)6T and D(M6L of of line heating all other panels.

TRANSVERSE

-3.5	1.25	-2.5
-1	-14.5	1
2	-0.75	-5

LONGITUDINAL

2.25	0.25	-2.5
0.5	-12.5	3
-5	-0.5	-5.5

2. The affect on D(MAX) of all other panels by heating panel #6

TRANSVERSE

1	-0.5	5.5
-0.5	1.5	1
0.5	-1	1.5

LONGITUDINAL

1.25	1	5.75
0.25	2.25	3
-0.25	-0.25	3

PANEL #7

. The affect on D(MAX)7T and D(MAX)7L of line heating all other panels.

TRANSVERSE

2	-0.75	-1
2	8.5	0.5
33	-6.25	-1

LONGITUDINAL

2.75	0.75	-1.25
1.25	9	-0.25
39.25	-6.25	0

. The affect on D(MAX) of all other panels by heating panel #7

TRANSVERSE

1	-0.5	-0.5
1.75	7	2
33	-13.5	3.5

LONGITUDINAL

1	-0.25	0.25
0.25	7.75	-5
39.25	-11	2.75

PANEL #8

. The affect on D(MAX)8T and D(MAX)8L of line heating all other panels.

TRANSVERSE

-1	0.75	0
0	-1	-1
-13.5	-27.8	-6

LONGITUDINAL

-0.5	0.75	-0.5
-0.5	-1.5	-0.25
-11	-27.5	-4.5

. The affect on D(MAX) of all other panels by heating panel #8

TRANSVERSE

-0.5	-1	-0.5
0.5	-0.25	-0.75
-6.25	-27.8	-0.75

LONGITUDINAL

1.25	0.25	0
-0.25	0.25	-0.5
-6.25	-27.5	-0.75

PANEL #9

1. The affect on D(MAX)9T and D(MAX)9L of line heating all other panels.

TRANSVERSE

-2.5	-0.75	-0.5
1	4	1.5
3.5	-0.75	-15

LONGITUDINAL

-2	-1.25	-2.5
1	4	3
2.75	-0.75	-11.3

2. The affect on D(MAX) of all other panels by heating panel #9

TRANSVERSE

0	0	1.5
-0.25	4.75	-5
-1	-6	-15

LONGITUDINAL

0.5	0.5	1
-0.5	5.25	-5.5
0	-4.5	-11.3

B. 1/8" STIFFENED PLATE. SECOND PASS

PANEL #1

1. The affect on D(MAX)1T and D(MAX)1L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE		
-21.3		
-1.5	3.25	
0		

LONGITUDINAL		
-19.5		
-1.5	2.5	
-1.25		

2. The affect on D(MAX) of all other panels by heating panel #1

TRANSVERSE		
-21.3	0	0
0.75	-3.5	1.75
1	-0.75	-0.75

LONGITUDINAL		
-19.5	1	-0.75
1	-3.25	1.75
0.5	-0.75	-0.5

PANEL #2

1. The affect on D(MAX)2T and D(MAX)2L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE		
0		
-1.5	-1	
1		

LONGITUDINAL		
1		
-1.5	-1.75	
0.5		

PANEL #3

1. The affect on D(MAX)3T and D(MAX)3L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE		
0		
1.5	-5	
-0.25		

LONGITUDINAL		
-0.75		
1.25	-4.75	
0.25		

PANEL #4

1. The affect on D(MAX)4T and D(MAX)4L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE

0.75		
-27.8	1.25	
0		

LONGITUDINAL

1		
-26.8	2	
-0.25		

2. The affect on D(MAX) of all other panels by heating panel #4

TRANSVERSE

-1.5	-1.5	1.5
-27.8	5.5	-1.25
-1.25	1.25	-0.25

LONGITUDINAL

-1.5	-1.5	1.25
-26.8	5.5	-2.25
-1.25	1	-1.5

PANEL #5

1. The affect on D(MAX)5T and D(MAX)5L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE

-4.5		
5.5	-105	
-2.5		

LONGITUDINAL

-3.25		
5.5	-105	
-2.25		

2. The affect on D(MAX) of all other panels by heating panel #5

TRANSVERSE

3.25	-1	-5
1.25	-105	-7.5
2.25	16	-114

LONGITUDINAL

2.5	-1.75	-4.75
2	-105	-7.25
1.5	15.5	-114

PANEL #6

1. The affect on D(MAX)6T and D(MAX)6L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE			LONGITUDINAL		
1.75			1.75		
-1.25	-7.5		-2.25	-7.25	
-0.5			0.25		

PANEL #7

1. The affect on D(MAX)7T and D(MAX)7L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE			LONGITUDINAL		
1			0.5		
-1.25	2.25		-1.25	1.5	
-10			-9.5		

2. The affect on D(MAX) of all other panels by heating panel #7

TRANSVERSE			LONGITUDINAL		
0	1	-0.25	-1.25	0.5	0.25
0	-2.5	-0.5	-0.25	-2.25	0.25
-10	0.5	0	-9.5	1.25	0.75

PANEL #8

1. The affect on D(MAX)8T and D(MAX)8L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE			LONGITUDINAL		
-0.75			-0.75		
1.25	16		1	15.5	
0.5			1.25		

PANEL #9

1. The affect on D(MAX)9T and D(MAX)9L of line heating panels #5, #4, #1, and #7 a second pass.

TRANSVERSE			LONGITUDINAL		
-0.75			-0.5		
-0.25	-114		-1.5	114	
0			0.75		

C. 1/8" STIFFENED PLATE. THIRD PASS

PANEL #1

2. The affect on D(MAX) of all other panels by heating panel #1

TRANSVERSE			LONGITUDINAL		
-40.7	-3.5	0.75	-39.5	-3	1
0	-3	1.75	0.25	-3.25	1
-0.25	-0.25	0.5	0	-0.5	0

PANEL #7

2. The affect on D(MAX) of all other panels by heating panel #7

TRANSVERSE			LONGITUDINAL		
-25	0	0.5	-1	-0.5	0
1.5	-2.5	-0.5	2	-1.75	0.25
-20.3	2.75	-0.5	-19.5	4	0.5

D. 1/8" STIFFENED PLATE. FOURTH PASS

PANEL #7

2. The affect on D(MAX) of panels #4, #5, #7, and #8 by heating panel #7.

TRANSVERSE

-0.5	-1	
-25.8	1.25	

LONGITUDINAL

-1.5	-1.25	
-26	0.25	

PANEL #1

2. The affect on D(MAX) of panels #1, #2, #4, and #5 by heating panel #1.

TRANSVERSE

-43	0	
-0.25	-0.5	

LONGITUDINAL

-41.8	1.5	
0	0.25	

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